

ESSAYS

ON THE

INTELLECTUAL POWERS OF MAN;

TO WHICH IS ANNEXED

AN ANALYSIS OF ARISTOTLE'S LOGIC.

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WITH NOTES, QUESTIONS FOR EXAMINATION, AND A SYNOPTICAL TABLE OF CONTENTS.

BY THE

REV. G. N. WRIGHT, M.A. &c.

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EDITOR'S PREFACE.

THE value of these Essays as a sequel to Mr. Locke's great work, and as an analytical commentary upon the whole school of modern metaphysicians, being now fully appreciated, this edition has been prepared expressly as a standard class-book for collegiate institutions. Being written originally at different and distant periods, the connexion is, in many instances, not continuous,—former arguments are sometimes repeated, and new ones introduced without reference to those that have gone before. This inconvenience and ground of obscurity is here removed by a careful and exact enumeration of every argument urged by the author in support, or refutation, of a theory, in whatever part of the Essays it may have occurred, so that the chain of reasoning is completely united for the student's aid. Those passages in each section that are the most valuable or emphatic,—those, in general, that indicate the substance of the argument upon which the remainder of the section is but a dilation, are embraced between brackets, and the principal terms to be noticed within those brackets, are printed in Italic letters. Another purpose to which these enclosed passages are applicable is to present, *at once*, the answers to the questions implied in the sectional heads, as well as to those proposed for self examination at the end of each chapter. The importance of heads or contents, either interrogatory or enunciative, to each section, as well as the division of the chapters into sections, are such obvious advantages in Mr. Locke's Essay, that the Editor has been induced to adopt the same plan in his revision of this work. It is proper to observe, however, that the questions for examination, the Arabic numerals introduced so frequently in the text to

indicate the arguments and serve as links in the chain of demonstration, and the foot notes, in *every instance*, are all to be placed to the praise or censure of editorial labours.

Lord Bacon, Locke, Berkeley, and Reid, imitating the manner of the ancient philosophers, have employed examples, or illustrations, of a character so appropriate, that they assume an appearance of demonstration. These instruments of practical education are also remarkable beauties of composition, and the attention of the student should be uniformly called to them. An end so desirable is here attained by prefixing an index ☞ to each simile, analogy, or example; thus, in page 44, an index precedes the passage, "It may happen in *science* as in *building*, that an error in the foundation shall weaken the whole," &c.; and again, in page 304, the following, "The *power of invention* is not yet brought forth; but it is coming forward, and like the *bud of a tree*," &c. In the Table of Contents prefixed to this volume, the sectional heads are collected and arranged so as to form a complete and full synopsis of the Essays, and reference is facilitated by giving the page, chapter, and section of every head. Besides these *adminicula* to the study of the Author's inimitable Essays, translations of the numerous quotations from Latin authors are introduced in their proper places.

In this volume all those parts of the Author's writings that are purely metaphysical are brought together,—his Analysis of Aristotle's Logic having hitherto only appeared in the appendix to the works of his friend Lord Kames.

G. N. W.

Coed Celyn, Llanrwst, Denbighshire, 1842.

SYNOPTICAL TABLE OF CONTENTS.

PREFACE.

CHAPTER I.

ESSAY II.

OF THE POWERS WE HAVE BY MEANS OF OUR EXTERNAL SENSES.

ESSAY III.

OF MEMORY.

CHAPTER I.

CHAPTER II.

CHAPTER III.

CHAPTER IV.

CHAPTER V.

CHAPTER VI.

OF MR. LOCKE'S ACCOUNT OF OUR PERSONAL IDENTITY . . 243

CHAPTER VII.

THEORIES CONCERNING MEMORY . ib.

ESSAY IV.

OF CONCEPTION.

CHAPTER I.

OF CONCEPTION, OR SIMPLE APPREHENSION IN GENERAL . 261

CHAPTER II

THEORIES CONCERNING CONCEPTION 2

CHAPTER III.

CHAPTER IV.

ESSAY V.

OF ABSTRACTION.

CHAPTER I.

ESSAY VI.

OF JUDGMENT.

CHAPTER I.

CHAPTER II.

CHAPTER III.

CHAPTER IV.

CHAPTER V.

CHAPTER VI.

CHAPTER VII.

CHAPTER VIII.

ESSAY VII.

OF REASONING.

CHAPTER I.

CHAPTER II.

CHAPTER III.

CHAPTER IV.

ESSAY VIII.

OF TASTE.

CHAPTER I.

CHAPTER II.

CHAPTER III.

ANALYSIS OF ARISTOTLE'S LOGIC.

CHAPTER IV.

CHAPTER V.

DEDICATION.

TO

MR. DUGALD STEWART,

LATELY PROFESSOR OF MATHEMATICS, NOW PROFESSOR OF MORAL PHILOSOPHY

AND

DR. JAMES GREGORY,

PROFESSOR OF THE THEORY OF PHYSIC, IN THE UNIVERSITY OF EDINBURGH.

My Dear Friends,

I know not to whom I can address these Essays with more propriety than to you; not only on account of a friendship begun in early life on your part, though in old age on mine, and in one of you I may say hereditary; nor yet on account of that correspondence in our literary pursuits and amusements, which has always given me so great pleasure; but because, if these Essays have any merit, you have a considerable share in it, having not only encouraged me to hope that they may be useful, but favoured me with your observations on every part of them, both before they were sent to press, and while they were under it.

I have availed myself of your observations, so as to correct many faults that might otherwise have escaped me; and I have a very grateful sense of your friendship, in giving this aid to one who stood much in need of it; having no shame, but

much pleasure, in being instructed by those who formerly were my pupils, as one of you was.

It would be ingratitude to a man whose memory I most highly respect, not to mention my obligations to the late Lord Kames for the concern he was pleased to take in this work. Having seen a small part of it, he urged me to carry it on; took account of my progress from time to time; revised it more than once, as far as it was carried, before his death; and gave me his observations on it, both with respect to the matter and the expression. On some points we differed in opinion, and debated them keenly, both in conversation and by many letters, without any abatement of his affection, or of his zeal for the work's being carried on and published: for he had too much liberality of mind not to allow to others the same liberty in judging which he claimed to himself.

It is difficult to say whether that worthy man was more eminent in active life or in speculation. Very rare, surely, have been the instances where the talents for both were united in so eminent a degree.

His genius and industry, in many different branches of literature, will, by his works, be known to posterity: his private virtues, and public spirit, his assiduity, through a long and laborious life, in many honourable public offices, with which he was intrusted, and his zeal to encourage and promote every thing that tended to the improvement of his country in laws, literature, commerce, manufactures and agriculture, are best known to his friends and contemporaries.

The favourable opinion which he, and you my friends, were pleased to express of this work, has been my chief encouragement to lay it before the public; and perhaps, without that encouragement, it had never seen the light: for I have always found, that, without social intercourse, even a favourite speculation languishes; and that we cannot help thinking the better of our

own opinions when they are approved by those whom we esteem good judges.

You know that the substance of these Essays was delivered annually, for more than twenty years, in lectures to a large body of the more advanced students in this University, and for several years before, in another University. Those who heard me with attention, of whom I presume there are some hundreds alive, will recognise the doctrine which they heard, some of them thirty years ago, delivered to them more diffusely, and with the repetitions and illustrations proper for such audiences.

I am afraid, indeed, that the more intelligent reader, who is conversant in such abstract subjects, may think that there are repetitions still left, which might be spared. Such, I hope, will consider, that what to one reader is a superfluous repetition, to the greater part, less conversant with such subjects, may be very useful. If this apology be deemed insufficient, and be thought to be the dictate of laziness, I claim some indulgence even for that laziness, at my period of life.

You who are in the prime of life, with the vigour which it inspires, will, I hope, make more happy advances in this or in any other branch of science to which your talents may be applied.

THOMAS REID.

GLASGOW COLLEGE,
June 1, 1785.

PREFACE.

I. *Physics and pneumatology.*—HUMAN knowledge may be reduced to two general heads, according as it relates to *body* or to *mind;* to things material, or to things intellectual.

The whole system of bodies in the universe, of which we know but a very small part, may be called the material world, the whole system of minds, from the infinite Creator to the meanest creature endowed with thought, may be called the intellectual world. These are the two great kingdoms of nature that fall within our notice; and about the one or the other, or things pertaining to them, every art, every science, and every human thought is employed; nor can the boldest flight of imagination carry us beyond their limits.

Many things there are, indeed, regarding the nature and the structure both of body and of mind, which our faculties cannot reach; many difficulties which the ablest philosopher cannot resolve; but of other natures, if any other there be, we have no knowledge, no conception at all.

II. *General division of the objects of knowledge.*—That every thing that exists must be either corporeal or incorporeal, is evident. But it is not so evident, that every thing that exists must either be corporeal, or endowed with thought. Whether there be in the universe, beings which are neither extended, solid and inert, like body, nor active and intelligent, like mind, seems to be beyond the reach of our knowledge. There appears to be a vast interval between body and mind, and whether there be any intermediate nature that connects them together, we know not.

some of his writings was worthy of his genius—"Inveniam viam aut faciam."

There is a natural order in the progress of the sciences, and good reasons may be assigned why the philosophy of body should be *elder sister* to that of mind, and of a quicker growth; but the last hath the principle of life no less than the first, and will grow up, though slowly, to maturity. The remains of ancient philosophy upon this subject, are venerable ruins, carrying the marks of genius and industry, sufficient to inflame, but not to satisfy, our curiosity. In later ages, Des Cartes was the first that pointed out the road we ought to take in those dark regions. Malebranche, Arnauld, Locke, Berkeley, Buffier, Hutcheson, Butler, Hume, Price, Lord Kames, have laboured to make discoveries; nor have they laboured in vain. For, however different and contrary their conclusions are, however sceptical some of them, they have all given new light, and cleared the way to those who shall come after them.

We ought never to despair of human genius, but rather to hope, that, in time, it may produce a system of the powers and operations of the human mind, no less certain than those of optics or astronomy.

V. *The study of pneumatology auxiliary to the acquisition of other sciences.*—This is the more devoutly to be wished, that a distinct knowledge of the powers of the mind would undoubtedly *give great light to many other branches of science.** Mr. Hume hath justly observed, that "all the sciences have a relation to human nature; and, however wide any of them may seem to run from it, they still return back by one passage or another. This is the centre and capitol of the sciences, which being once masters of, we may easily extend our conquests everywhere."

The faculties of our minds are the tools and engines we must use in every disquisition; and the better we understand their nature and force, the more successfully we shall be able to apply them. Mr. Locke gives this account of the occasion of his entering upon his Essay concerning human understanding: "Five or six friends," says he, "meeting at my chamber, and dis-

* It "will bring us great advantage, in directing our thoughts in the search of other things."—Locke.

coursing on a subject very remote from this, found themselves quickly at a stand, by the difficulties that rose on every side. [After we had for a while puzzled ourselves, without coming any nearer to a resolution of those doubts that perplexed us, it came into my thoughts that we took a wrong course: and that, before we set ourselves upon inquiries of that nature, it was necessary to examine our own abilities, and see what objects our understandings were fitted or not fitted to deal with.] This I proposed to the company, who all readily assented; and thereupon it was agreed that this should be our first inquiry." If this be commonly the cause of perplexity in those disquisitions which have least relation to the mind, it must be so much more in those that have an immediate connexion with it.

The sciences may be distinguished into two classes, according as they pertain to the material or to the intellectual world. The various parts of natural philosophy, the mechanical arts, chemistry, medicine, and agriculture, belong to the first; but, to the last, belong grammar, logic, rhetoric, natural theology; morals, jurisprudence, law, politics, and the fine arts. The knowledge of the human mind is the root from which these grow, and draw their nourishment. Whether, therefore, we consider the dignity of this subject, or its subserviency to science in general, and to the noblest branches of science in particular, it highly deserves to be cultivated.

VI. *Burke recommends an inquiry into the human mind.*—A very elegant writer on the sublime and beautiful, concludes his account of the passions thus: [" The variety of the passions is great, and worthy, in every branch of that variety, of the most diligent investigation. The more accurately we search into the human mind, the stronger traces we *everywhere find of His wisdom who made it.*] If a discourse on the use of the parts of the body may be considered as a hymn to the Creator, the use of the passions, which are the organs of the mind, cannot be barren of praise to Him, nor unproductive to ourselves of that noble and uncommon union of science and admiration, which a contemplation of the works of Infinite Wisdom alone can afford to a rational mind; whilst referring to Him whatever we find of right, or good, or fair, in ourselves, discovering His strength and wisdom even in our own weakness and imperfection, honouring them

where we discover them clearly, and adoring their profundity where we are lost in our search, we may be inquisitive without impertinence, and elevated without pride; we may be admitted, if I may dare to say so, into the counsels of the Almighty, by a consideration of his works. This elevation of the mind ought to be the principal end of all our studies, which, if they do not in some measure effect, they are of very little service to us."

QUESTIONS FOR EXAMINATION.

Human knowledge twofold?

The division of things into corporeal and incorporeal preferable to their division into material and intellectual?

Different conjectures as to the phenomena of the universe?

Whence arises the general prejudice against the study of pneumatology?

On what grounds does Reid consider its cultivation deserving of the highest attention?

Locke's reasons for the like preference?

Why does Burke recommend the study of the human mind and its operations?

ESSAYS

ON THE

INTELLECTUAL POWERS OF MAN.

PRELIMINARY ESSAY.

CHAPTER I.

EXPLICATION OF WORDS

I. *A chief impediment to the progress of knowledge.*—There is no greater impediment to the advancement of knowledge than the *ambiguity of words.* To this chiefly it is owing that we find sects and parties in most branches of science; and disputes, which are carried on from age to age, without being brought to an issue.

II. *Cause of the progress of mathematical sciences.*—Sophistry has been more effectually excluded from mathematics and natural philosophy than from other sciences. In mathematics it had no place from the beginning: [mathematicians having had the wisdom *to define accurately the terms they use*, and to lay down, as axioms, the first principles on which their reasoning is grounded. Accordingly we find no parties among mathematicians, and hardly any disputes.]

In natural philosophy, there was no less sophistry, no less dispute and uncertainty, than in other sciences, until, about a century and a half ago, this science began to be built upon the foundation of clear definitions and self-evident axioms. Since that time, the science, as if watered with the dew of heaven, hath grown apace; disputes have ceased, truth hath prevailed, and the science hath received greater increase in two centuries than in two thousand years before.

III. *The foundations of all science.*—It were to be wished that this method, which hath been so successful in those branches of science, were attempted in others: for [definitions and axioms are the foundations of all science.] But that definitions may

not be sought where no definition can be given, nor logical definitions be attempted, where the subject does not admit of them, it may be proper to lay down some general principles concerning definition, for the sake of those who are less conversant in this branch of logic.

Terms of art.—When one undertakes to explain any art or science, he will have occasion to use many words that are common to all who use the same language, and some that are peculiar to that art or science. Words of the last kind are called *terms of the art*, and ought to be distinctly explained, that their meaning may be understood.

IV. *All words do not admit of being defined.*—[A definition is nothing else but an explication of the meaning of a word, by words whose meaning is already known. Hence it is evident, that *every word cannot be defined;* for the definition must consist of words; and there could be no definition, if there were not words previously understood without definition.] Common words, therefore, ought to be used in their common acceptation; and, when they have different acceptations in common language, these, when it is necessary, ought to be distinguished. But they require no definition. It is sufficient to define words that are uncommon, or that are used in an uncommon meaning.

V. *Words which cannot be logically defined.*—It may farther be observed, that there are many words, which, though they may need explication, cannot be logically defined. [A logical definition, that is, a strict and proper definition, must express the *kind* of the thing defined, and the *specific difference*, by which the species defined, is distinguished from every other species belonging to that kind.] It is natural to the mind of man to class things under various kinds, and again to subdivide every kind into its various species. A species may often be subdivided into subordinate species, and then it is considered as a kind.

VI. *Individuals, the most general terms, and certain species cannot be logically defined.*—From what has been said of logical definition, it is evident, that no word can be logically defined which does not denote a species; because such things only can have a specific difference; and a specific difference is essential to a logical definition. On this account there can be no logical definition of *individual things*, such as London or Paris. [(1) *Individuals* are distinguished either by proper names, or by accidental circumstances of time or place; but they have no specific difference; and therefore, though they may be known by proper names, or *may be described* by circumstances or relations, they cannot be defined.] [It is no less evident, that (2) *the most general words* cannot be logically defined, because there is not a more general term of which they are a species.]

[Nay, we cannot define (3) every *species of things*, because it

happens sometimes that *we have not words to express the specific difference*. Thus a scarlet colour is, no doubt, a species of colour; but how shall we express the specific difference by which scarlet is distinguished from green or blue?] The difference of them is immediately perceived by the eye; but we have not words to express it. These things we are taught by logic.

Without having recourse to the principles of logic, we may easily be satisfied that words cannot be defined, which signify things perfectly simple, and void of all composition. This observation, I think, was first made by Des Cartes, and afterwards more fully illustrated by Locke. And however obvious it appears to be, many instances may be given of great philosophers who have perplexed and darkened the subjects they have treated, by not knowing, or not attending to it.

VII. *Remarkable defect of the Aristotelian philosophy.*—When men attempt to define things which cannot be defined, their definitions will always be either obscure or false. [It was one of the capital defects of Aristotle's philosophy, that he pretended to define the simplest things, which neither can be, nor need to be defined; such as *time* and *motion*.] Among modern philosophers, I know none that has abused definition so much as Wolfius, the famous German philosopher, who, in a work on the human mind, called *Psychologia Empirica*, consisting of many hundred propositions, fortified by demonstrations, with a proportional accompaniment of definitions, corollaries, and scholia, has given so many definitions of things which cannot be defined, and so many demonstrations of things self-evident, that the greatest part of the work consists of tautology, and ringing changes upon words.

VIII. *Terms peculiar to pneumatology are often incapable of definition.*—[There is no subject in which there is more frequent occasion to use words that cannot be logically defined, than in treating of the powers and operations of the mind. The simplest operations of our minds must all be expressed by words of this kind.] No man can explain by a logical definition what it is to think, to apprehend, to believe, to will, to desire. Every man who understands the language has some notion of the meaning of these words; and every man who is capable of reflection, may, by attending to the operations of his own mind which are signified by them, form a clear and distinct notion of them; but they cannot be logically defined.

[Since therefore it is often impossible to define words which we must use on this subject, we must as much as possible use *common words in their common acceptation*, pointing out their various senses where they are ambiguous;] and when we are obliged to use words less common we must endeavour to explain them as well as we can, without affecting to give logical

definitions, when the nature of the thing does not admit of them.

The following observations on the meaning of certain words are intended to supply, as far as we can, the want of definitions, by preventing ambiguity or obscurity in the use of them.

1. By the *mind* of a man, we understand that in him which thinks, remembers, reasons, wills. The essence both of body and of mind is unknown to us. We know certain properties of the first, and certain operations of the last, and by these only we can define or describe them. We define body to be that which is extended, solid, moveable, divisible. In like manner, we define mind to be that which thinks. We are conscious that we think, and that we have a variety of thoughts of different kinds; such as seeing, hearing, remembering, deliberating, resolving, loving, hating, and many other kinds of thought, all which we are taught by nature to attribute to one internal principle; and this principle of thought we call the *mind* or *soul* of a man.

2. By the *operations* of the mind, we understand every mode of thinking of which we are conscious.

It deserves our notice, that the various modes of thinking have always, and in all languages, as far as we know, been called by the name of *Operations* of the mind, or by names of the same import. To body we ascribe various properties, but not operations, properly so called; it is extended, divisible, moveable, inert; it continues in any state in which it is put; every change of its state is the effect of some force impressed upon it, and is exactly proportional to the force impressed, and in the precise direction of that force. These are the general properties of matter, and these are not operations; on the contrary, they all imply its being a dead inactive thing, which moves only as it is moved, and acts only by being acted upon.

But the mind is from its very nature a living and active being. Every thing we know of it implies life and active energy; and the reason why all its modes of thinking are called its operations, is, that in all, or in most of them, it is not merely passive as body is, but is really and properly active.

IX. *The mind active, according to human judgment.*—In all ages, and in all languages, ancient and modern, the various modes of thinking have been expressed by words of active signification, such as seeing, hearing, reasoning, willing, and the like. It seems therefore to be the natural judgment of mankind, that the mind is active in its various ways of thinking; and for this reason they are called its *operations*, and are expressed by *active* verbs.]

It may be made a question, What regard is to be paid to this natural judgment? may it not be a vulgar error? Philosophers who think so, have, no doubt, a right to be heard.

But until it is proved that the mind is not active in thinking, but merely passive, the common language with regard to its operations ought to be used, and ought not to give place to a phraseology invented by philosophers, which implies its being merely passive.

3. The words *power* and *faculty*, which are often used in speaking of the mind, need little explication. Every operation supposes a power in the being that operates; for, to suppose anything to operate which has no power to operate, is manifestly absurd. But, on the other hand, there is no absurdity in supposing a being to have power to operate, when it does not operate. Thus, I may have power to walk, when I sit; or to speak, when I am silent. Every operation, therefore, implies power; but the power does not imply the operation.

X. *Faculties, habits, capacity.*—The *faculties* of the mind, and its *powers*, are often used as synonymous expressions. [But as most synonymes have some minute distinction that deserves notice, I apprehend that the word *faculty* is most properly applied to those powers of the mind which are *original* and *natural*, and which make a part of the constitution of the mind. There are other powers which are *acquired* by use, exercise, or study, which are not called faculties, but *habits*. There must be something in the constitution of the mind necessary to our being able to acquire habits, and this is commonly called *capacity*.]

4. We frequently meet with a distinction in writers upon this subject, between things *in the mind* and things *external* to the mind. The powers, faculties, and operations of the mind are things in the mind. Every thing is said to be *in the mind*, of which the mind is the *subject*. It is self-evident, that there are some things which cannot exist without a subject to which they belong, and of which they are attributes. Thus, colour must be in something coloured; figure in something figured; thought can only be in something that thinks; wisdom and virtue cannot exist but in some being that is wise and virtuous. When, therefore, we speak of things in the mind, we understand by this, things of which the mind is the subject. Excepting the mind itself and things in the mind, all other things are said to be external. It ought, therefore, to be remembered, that this distinction between things in the mind and things external, is not meant to signify the place of the things we speak of, but their *subject*.

There is a figurative sense in which things are said to be in the mind, which it is sufficient barely to mention. We say, such a thing was not in my mind, meaning no more than that I had not the least thought of it. By a figure, we put the thing for the thought of it. In this sense, external things are in the mind as often as they are the objects of our thought.

5. *Thinking* is a very general word, which includes all the operations of our minds, and is so well understood as to need no definition.

To *perceive*, to *remember*, to be *conscious*, and to *conceive* or *imagine*, are words common to philosophers and to the vulgar. They signify different operations of the mind, which are distinguished in all languages and by all men that think. I shall endeavour to use them in their most common and proper acceptation, and I think they are hardly capable of strict definition. But as some philosophers, in treating of the mind, have taken the liberty to use them very improperly, so as to corrupt the English language, and to confound things which the common understanding of mankind hath always led them to distinguish, I shall make some observations on the meaning of them, that may prevent ambiguity or confusion in the use of them.

XI. *Perception, Conception, Consciousness, and Memory,*—
6. [*First*, We are never said to *perceive* things, *of the existence of which we have not a full conviction.* I may *conceive* or *imagine* a mountain of gold or a winged horse, but no man says that he perceives such a creature of imagination. Thus *perception* is distinguished from *conception* or imagination. *Secondly*, Perception is applied only *to external objects, not to those that are in the mind itself.* When I am pained, I do not say that I perceive pain, but that I feel it, or that I am conscious of it. Thus *perception* is distinguished from *consciousness*. *Thirdly*, The immediate object of perception must be *something present, and not what is past.*] We may *remember* what is past, but do not perceive it. ☞ I may say, I perceive such a person has had the *small-pox*, but this phrase is figurative, although the figure is so familiar that it is not observed. The meaning of it is, that I perceive the pits in his face, which are certain signs of his having had the small-pox. We say we perceive the thing signified, when we only perceive the sign. But when the word *perception* is used properly, and without any figure, it is never applied to things past. And thus it is distinguished from *remembrance*.

XII. *Original signification of "perception," and its analogical application.*—[In a word, perception is most properly applied to *the evidence which we have of external objects by our senses.* But as this is a very clear and cogent kind of evidence, the word is often applied by analogy to the evidence of *reason or of testimony*, when it is clear and cogent.] The perception of external objects by our senses is an operation of the mind of a peculiar nature, and ought to have a name appropriated to it. It has so in all languages. And, in the English, I know no word more proper to express this act of the mind than perception. Seeing, hearing, smelling, tasting, and touching or feeling, are words that

express the operations proper to each sense; perceiving expresses that which is common to them all.

XIII. *Abuse of the word "perception" by Hume.*—The observations made on this word would have been unnecessary, if it had not been so much abused in philosophical writings upon the mind: for, in other writings, it has no obscurity. Although this abuse is not chargeable on Mr. Hume only, yet I think he has carried it to the highest pitch. The first sentence of his "Treatise of Human Nature" runs thus: ["All the *perceptions* of the human mind resolve themselves into two distinct heads, which I shall call impressions and ideas." He adds, a little after, that, under the name of impressions, he comprehends all our sensations, passions, and emotions. Here we learn, that our passions and emotions are perceptions.] I believe, no English writer before him ever gave the name of a perception to any passion or emotion. When a man is angry, we must say that he has the perception of anger. When he is in love, that he has the perception of love. He speaks often of the perceptions of memory, and of the perceptions of imagination; and he might as well speak of the hearing of sight, or of the smelling of touch; for surely hearing is not more different from sight, or smelling from touch, than perceiving is from remembering or imagining.

7. *Consciousness* is a word used by philosophers to signify that immediate knowledge which we have of our present thoughts and purposes, and, in general, of all the present operations of our minds. Whence we may observe, that consciousness is only of things present. To apply consciousness to things past, which sometimes is done in popular discourse, is to confound consciousness with memory; and all such confusion of words ought to be avoided in philosophical discourse. It is likewise to be observed, that consciousness is only of things in the mind, and not of external things. It is improper to say, I am conscious of the table which is before me. I perceive it, I see it, but do not say I am conscious of it. As that consciousness by which we have a knowledge of the operations of our own minds, is a different power from that by which we perceive external objects, and as these different powers have different names in our language, and, I believe, in all languages, a philosopher ought carefully to preserve this distinction, and never to confound things so different in their nature.

XIV. "*Conception*" *distinguished from all other operations of the mind.*—8. *Conceiving*, *imagining*, and *apprehending* are commonly used as synonymous in our language, and signify the same thing which the logicians call *simple apprehension*. This is an operation of the mind different from all those we have mentioned. Whatever we perceive, whatever we remember, whatever we are conscious of, we have a full persuasion or conviction

of its existence. But we may conceive or imagine what has no existence, and what we firmly believe to have no existence. What never had an existence cannot be remembered; what has no existence *at present* cannot be the object of perception or of consciousness; but what never had nor has any existence may be conceived. Every man knows that it is as easy to conceive a winged horse or a centaur as it is to conceive a horse or a man. [Let it be observed, therefore, that to *conceive*, to *imagine*, to *apprehend*, when taken in the proper sense, signify an act of the mind *which implies no belief or judgment at all*. It is an act of the mind by which nothing is affirmed or denied, and which, therefore, can neither be true nor false.]

XV. *Another signification of the same words.*—[But there is another and a very different meaning of those words, so common and so well authorised in language, that it cannot easily be avoided; and on that account we ought to be the more on our guard, that we be not misled by the ambiguity. Politeness and good breeding lead men, on most occasions, to express their opinions with modesty, especially when they differ from others whom they ought to respect. [Therefore, when we would express our opinion modestly, instead of saying, "This is my opinion," or "this is my judgment," which has the air of dogmaticalness, we say, "I conceive it to be thus, I imagine or apprehend it to be thus;" which is understood as a modest declaration of our judgment.] In like manner, when any thing is said which we take to be impossible, we say, "We cannot conceive it," meaning that we cannot believe it.

XVI. *Ambiguity in their meanings avoided.*—Thus we see, that the words *conceive, imagine, apprehend*, have two meanings, and are used to express two operations of the mind, which ought never to be confounded. Sometimes they express simple apprehension, which implies no judgment at all; sometimes they express judgment or opinion. This ambiguity ought to be attended to, that we may not impose upon ourselves or others in the use of them. [(1) The *ambiguity is* indeed *remedied*, in a great measure, by their construction. When they are used to express simple apprehension, they are followed by a noun in the *accusative case*, which signifies the object conceived. But when they are used to express opinion or judgment, they are commonly followed by a verb in the *infinitive mood*.] "I conceive an Egyptian pyramid." This implies no judgment. "I conceive the Egyptian pyramids to be the most ancient monuments of human art." This implies judgment. [(2) When the words are used in the last sense, the thing conceived must be a proposition, because judgment cannot be expressed but by a *proposition*. When they are used in the first sense, the thing conceived may be no proposition, but a simple term only, as a pyramid, an obelisk.]

Yet it may be observed, that even a proposition may be simply apprehended without forming any judgment of its truth or falsehood: for it is one thing to conceive the meaning of a proposition; it is another thing to judge it to be true or false.

Although the distinction between simple apprehension and every degree of assent or judgment, be perfectly evident to every man who reflects attentively on what passes in his own mind; although it is very necessary, in treating of the powers of the mind, to attend carefully to this distinction; yet, in the affairs of common life, it is seldom necessary to observe it accurately. On this account we shall find, in all common languages, the words which express one of those operations frequently applied to the other. To think, to suppose, to imagine, to conceive, to apprehend, are the words we use to express simple apprehension; but they are all frequently used to express judgment. Their ambiguity seldom occasions any inconvenience in the common affairs of life, for which language is framed. But it has perplexed philosophers, in treating of the operations of the mind, and will always perplex them, if they do not attend accurately to the different meanings which are put upon those words on different occasions.

XVII. 9. *Distinction between the operations of the mind and their objects.*—Most of the operations of the mind, from their very nature, must have *objects* to which they are directed, and about which they are employed. He that perceives, must perceive something; and that which he perceives is called the object of his perception. To perceive, without having any object of perception, is impossible. The mind that perceives, the object perceived, and the operation of perceiving that object, are distinct things, and are distinguished in the structure of all languages. In this sentence, "I see, or perceive the moon;" *I* is the person or *mind;* the active verb *see* denotes the operation of that mind; and the *moon* denotes the object. What we have said of perceiving, is equally applicable to most operations of the mind. Such operations are, in all languages, expressed by active transitive verbs: and we know that, in all languages, such verbs require a thing or person, which is the agent, and a noun following in an oblique case, which is the object. [Whence it is evident that all mankind, both those who have contrived language, and those who use it with understanding, have distinguished these three things as different, to wit, the *operations* of the mind, which are expressed by active verbs, the *mind* itself, which is the nominative to those verbs, and the *object*, which is, in the oblique case, governed by them.]

XVIII. *This distinction confounded by Hume.*—It would have been unnecessary to explain so obvious a distinction, if some systems of philosophy had not confounded it. [Mr. Hume's

system, in particular, confounds all distinction between the *operations* of the mind and their *objects*. When he speaks of the ideas of memory, the ideas of imagination, and the ideas of sense, it is often impossible, from the tenor of his discourse, to know whether, by those ideas, he means the operations of the mind, or the objects about which they are employed. And indeed, according to his system, there is no distinction between the one and the other.]

A philosopher is, no doubt, entitled to examine even those distinctions that are to be found in the structure of all languages, and, if he is able to show that there is no foundation for them in the nature of the things distinguished, if he can point out some prejudice common to mankind which has led them to distinguish things that are not really different, in that case such a distinction may be imputed to a vulgar error, which ought to be corrected in philosophy. But when, in the first setting out, he takes it for granted, without proof, that distinctions found in the structure of all languages, have no foundation in nature; this surely is too fastidious a way of treating the common sense of mankind. When we come to be instructed by philosophers, we must bring the old light of common sense along with us, and by it judge of the new light which the philosopher communicates to us. But when we are required to put out the old light altogether, that we may follow the new, we have reason to be on our guard. There may be distinctions that have a real foundation, and which may be necessary in philosophy, which are not made in common language, because not necessary in the common business of life. But I believe no instance will be found of a distinction made in all languages, which has not a just foundation in nature.

XIX. 10. *"Idea" used in a twofold sense.*—The word **idea** occurs so frequently in modern philosophical writings upon the mind, and is so ambiguous in its meaning, that it is necessary to make some observations upon it. [There are chiefly two meanings of this word in modern authors, a *popular* and a *philosophical.*]

[*First,* In *popular* language, *idea* signifies the same thing as conception, apprehension, notion. *To have an idea of any thing, is to conceive it.* To have a distinct idea, is to conceive it distinctly.] To have no idea of it, is not to conceive it at all. It was before observed, that conceiving or apprehending has always been considered by all men as an act or operation of the mind, and on that account has been expressed in all languages by an active verb. When, therefore, we use the phrase of having ideas, in the popular sense, we ought to attend to this, that it signifies precisely the same thing which we commonly express by the active verbs conceiving or apprehending.

When the word idea is taken in this popular sense, no man can possibly doubt whether he has ideas. For he that doubts must think, and to think is to have ideas.

Sometimes, in popular language, a man's ideas signify his opinions. The ideas of Aristotle or of Epicurus, signify the opinions of these philosophers. What was formerly said of the words *imagine, conceive, apprehend,* that they are sometimes used to express judgment, is no less true of the word idea. This signification of the word seems indeed more common in the French language than in English. But it is found in this sense in good English authors, and even in Mr. Locke. Thus we see, that having *ideas*, taken in the popular sense, has precisely the same meaning with conceiving, imagining, apprehending, *and has likewise the same ambiguity.* It may, therefore, be doubted, whether the introduction of this word into popular discourse, to signify the operation of conceiving or apprehending, was at all necessary. For, *first*, we have, as has been shown, several words which are either originally English, or have been long naturalized, that express the same thing; why therefore should we adopt a Greek word in place of these, any more than a French or a German word? Besides, the words of our own language are less ambiguous. For the word idea has, for many ages, been used by philosophers as a term of art; and in the different systems of philosophers means very different things.

[*Secondly*, According to the *philosophical* meaning of the word idea, it does not signify that act of the mind which we call thought or conception, but some object of thought.] Ideas, according to Mr. Locke, (whose very frequent use of this word has probably been the occasion of its being adopted into common language,) "are nothing but the immediate objects of the mind in thinking."* But of those objects of thought called ideas, different sects of philosophers have given a very different account. Bruckerus, a learned German, wrote a whole book giving the history of ideas.

XX. *The three first Principles of the Pythagoreans.*—The most ancient system we have concerning ideas, is that which is explained in several dialogues of Plato, and which many ancient, as well as modern writers, have ascribed to Plato as the inventor. But it is certain that Plato had his doctrine upon this subject, as well as the name *idea*, from the school of Pythagoras. We have still extant a tract of Timæus the Locrian, a Pythagorean philosopher, concerning the soul of the world, in which we find the substance of Plato's doctrine concerning ideas. They were held

* "That term, which I think serves best to stand for whatsoever is the object of the understanding when a man thinks. I have used it to express whatever is meant by *phantasm, notion, species,* or whatever it is that the mind can be employed about in thinking."—Introduction, sec. 8.

to be eternal, uncreated, and immutable forms or models, according to which the Deity, of an *eternal matter*, made every species of things that exists. Those philosophers held. that there are three first principles of all things. [*First*, an eternal matter, of which all things were made; *secondly*, eternal and immaterial forms or ideas, according to which they were made; and, *thirdly*, an efficient cause, the Deity, who made them.] [The mind of man, in order to its being fitted for the contemplation of these eternal ideas, must undergo a certain purification, and be weaned from sensible things. The eternal ideas are the only object of science, because the *objects of sense* being in a perpetual flux, *there can be no real knowledge with regard to them*.]

XXI. *How far the "latter" differ from the "elder" Platonists.*—[The philosophers of the Alexandrian school, commonly called *the latter Platonists*, made some change upon the system of the ancient Platonists with respect to the eternal ideas. They held them *not* to be a principle distinct from the Deity, but to be the conceptions of things in the divine understanding, the natures and essences of all things being perfectly known to him from eternity.]

XXII. *Malebranche's system of Ideas.*—[It ought to be observed, that the Pythagoreans and the Platonists, whether elder or latter, made the eternal ideas to be objects of science *only*, and of abstract contemplation, not the objects of sense. And in this the ancient system of eternal ideas differs from the modern one of Father Malebranche.] He held in common with other modern philosophers, that no external thing is perceived by us immediately, but only by ideas: but he thought that the ideas by which we perceive an external world, are the ideas of the Deity himself, in whose mind the ideas of all things, past, present, and future, must have been from eternity; for the Deity being intimately present to our minds at all times, may discover to us as much of his ideas as he sees proper, according to certain established laws of nature. And in his ideas, as in a mirror, we perceive whatever we do perceive of the external world.

XXIII. *Platonic and Aristotelian systems differ.*—[Thus we have three systems, which maintain that the ideas, which are the immediate objects of human knowledge, are eternal and immutable, and *existed before the things which they represent*. There are other systems, according to which the ideas, which are the immediate objects of all our thoughts, *are posterior to the things which they represent*, and derived from them.] We shall give some account of these; but as they have gradually sprung out of the ancient Peripatetic system, it is necessary to begin with some account of it.

XXIV. *Peripatetic theory of Ideas.*—[Aristotle taught, that all the objects of our thought enter at first by the senses; and,

since the sense cannot receive external material objects themselves, it receives their species; that is, their images or *forms*, without the matter; as wax receives the form of the seal, without any of the matter of it. These images or forms, impressed upon the senses, are called *sensible species*,* and are the objects only of the sensitive part of the mind.] But, by various internal powers, they are retained, refined, and spiritualized, so as to become objects of *memory* (1) and *imagination* (2), and, at last, of pure *intellection* (3). When they are objects of memory and of imagination, they get the name of *phantasms*. When, by farther refinement, and being stripped of their particularities, they become objects of *science*, they are called *intelligible species*. So that every immediate object, whether of sense, of memory, of imagination, or of reasoning, must be some phantasm or species in the mind itself.

The followers of Aristotle, especially the schoolmen, made great additions to this theory, which the author himself mentions very briefly, and with an appearance of reserve. They entered into large disquisitions with regard to the sensible species, what kind of things they are; how they are sent forth by the object, and enter by the organs of the senses; how they are preserved and refined by various agents, called internal senses; concerning the number and offices of which they had many controversies. But we shall not enter into a detail of these matters.

XXV. *Modern Philosophers have taken their Theory of Ideas from Aristotle.*—[The reason of giving this brief account of the theory of the Peripatetics, with regard to the immediate objects of our thoughts, is, because the doctrine of modern philosophers concerning ideas is built upon it. Mr. Locke, who uses this word so very frequently, tells us, that he means the same thing by it, as is commonly meant by *species* or *phantasm*.]† Gassendi, from whom Locke borrowed more than from any other author, says the same. The words *species* and *phantasm*, are terms of art in the Peripatetic system, and the meaning of them is to be learned from it.

XXVI. *Theories of Aristotle, Democritus, and Epicurus.*—The theory of Democritus and Epicurus, on this subject, was not very unlike to that of the Peripatetics. [They held, that all bodies continually send forth *slender films* or *spectres* from their surface, of such extreme subtilty, that they easily penetrate our gross bodies, or enter by the organs of sense, and stamp their image upon the mind.] [The sensible species of Aristotle were mere forms *without* matter. The spectres of Epicurus were composed of a *very subtile matter*.]

Modern philosophers, as well as the Peripatetics and Epicu-

* Vide Cumberland, "De Legibus Naturæ."—Prolegomena, sec. viii.

† Vide p. 11, *Note*.

reans of old, have conceived, that external objects cannot be the immediate objects of our thought; that there must be some image of them in the mind itself, in which, as in a mirror, they are seen. And the name *idea*, in the philosophical sense of it, is given to those internal and immediate objects of our thoughts. The external thing is the remote or mediate object; but the idea, or image of that object in the mind, is the immediate object, without which we could have no perception, no remembrance, no conception of the mediate object.

XXVII. *Popular and Philosophical meanings of the word "Idea."*—When, therefore, in common language, we speak of having an idea of anything, we mean no more by that expression, but thinking of it. The vulgar allow, that this expression implies a mind that thinks; an act of that mind which we call thinking, and an object about which we think. But, besides these three, the philosopher conceives that there is a fourth, to wit, the *idea*, which is the immediate object. The idea is in the mind itself, and can have no existence but in a mind that thinks; but the remote or mediate object may be something external, as the sun or moon; it may be something past or future; it may be something which never existed. This is the philosophical meaning of the word *idea*; and we may observe, that this meaning of that word is built upon a philosophical opinion: for, if philosophers had not believed that there are such immediate objects of all our thoughts in the mind, they would never have used the word idea to express them.

I shall only add on this article, that, although I may have occasion to use the word idea in this philosophical sense in explaining the opinions of others, I shall have no occasion to use it in expressing my own, because I believe *ideas*, taken in this sense, to be a mere fiction of philosophers. And, in the popular meaning of the word, there is the less occasion to use it, because the English words, *thought*, *notion*, *apprehension*, answer the purpose as well as the Greek word *idea*; with this advantage, that they are less ambiguous. There is, indeed, a meaning of the word idea, which I think most agreeable to its use in ancient philosophy, and which I would willingly adopt, if use, the arbiter of language, did permit. But this will come to be explained afterwards.

XXVIII. *Ideas different from Impressions.*—11. The word *impression* is used by Mr. Hume, in speaking of the operations of the mind, almost as often as the word *idea* is by Mr. Locke. What the latter calls ideas, the former divides into two classes; one of which he call impressions, the other ideas. I shall make some observations upon Mr. Hume's explication of *that* word, and then consider the proper meaning of it in the English language.

"We may divide, (says Mr. Hume, Essays, 8vo. edit. vol. 2, page 18), all the perceptions of the human mind into two classes or species, which are distinguished by their different degrees of force and vivacity. The less lively and forcible are commonly denominated thoughts or ideas. The other species want a name in our language, and in most others; let us therefore use a little freedom, and call them impressions. [By the term *impressions*, then, I mean all our *more lively perceptions*, when we hear, or see, or feel, or love, or hate, or desire, or will. Ideas are the *less lively perceptions*, of which we are conscious, when we reflect on any of those sensations or movements above mentioned."]

XXIX. *Defect of Hume's division.*—This is the explication Mr. Hume hath given in his Essays of the term *impressions*, when applied to the mind; and his explication of it, in his Treatise of Human Nature, is to the same purpose.

Disputes about words belong rather to grammarians than to philosophers; but philosophers ought not to escape censure when they corrupt a language, by using words in a way which the purity of the language will not admit. I find fault with Mr. Hume's phraseology in the words I have quoted.

[*First*, Because he gives the name of *perceptions* to every *operation* of the mind. Love is a perception, hatred a perception. Desire is a perception, will is a perception; and, by the same rule, a doubt, a question, a command, is a perception. This is an intolerable abuse of language, which no philosopher has authority to introduce.]

[*Secondly*, When Mr. Hume says, *that we may divide all the* perceptions *of the human mind into two classes or* species, *which are distinguished by their* degrees *of force and vivacity*, the manner of expression is loose and unphilosophical. To differ in *species* is one thing; to differ in *degree* is another.] Things which differ in degree only must be of the same species. It is a maxim of common sense, admitted by all men, that *greater* and *less* do not make a change of species. The same man may differ in the degree of his force and vivacity, in the morning and at night; in health and in sickness: but this is so far from making him a different species, that it does not so much as make him a different individual. To say, therefore, that two different classes, or species of perceptions, are distinguished by the degrees of their force and vivacity, is to confound a difference of *degree* with a difference of *species*, which every man of understanding knows how to distinguish.

Thirdly, We may observe, that this author, having given the general name of *perception* to all the operations of the mind, and distinguished them into two classes or species, which differ only in degree of force and vivacity, tells us, that he gives the name of impressions to all our more lively perceptions; to wit, when

we hear, or see, or feel, or love, or hate, or desire, or will. There is great confusion in this account of the meaning of the word *impression*. When I see, this is an *impression*. But why has not the author told us, whether he gives the name of *impression* to the object seen, or to that act of my mind by which I see it? When I see the full moon, the full moon is one thing, my perceiving it is another thing. Which of these two things does he call an impression? We are left to guess this: nor does all that this author writes about impressions clear this point. Every thing he says tends to darken it, and to lead us to think, that the full moon which I see, and my seeing it, are not two things, but one and the same thing.

The same observation may be applied to every other instance the author gives to illustrate the meaning of the word *impression*. "When we hear, when we feel, when we love, when we hate, when we desire, when we will." In all these acts of the mind there must be an *object*, which is heard, or felt, or loved, or hated, or desired, or willed. Thus, for instance, I love my country. This, says Mr. Hume, is an *impression*. But what is the *impression?* Is it my country, or is it the affection I bear to it? I ask the philosopher this question; but I find no answer to it. [And when I read all that he has *written* on this subject, I find this word *impression* sometimes used to signify an *operation* of the mind, sometimes the *object* of the operation; but, for the most part, it is a vague and indetermined word that signifies both.]

I know not whether it may be considered as an apology for such abuse of words, in an author who understood the language so well, and used it with so great propriety in writing on other subjects, that Mr. Hume's system, with regard to the mind, required a language of a different structure from the common; or, if expressed in plain English, would have been too shocking to the common sense of mankind. To give an instance or two of this: If a man receives a present on which he puts a high value; if he see and handle it, and put it in his pocket, this, says Mr. Hume, is an *impression*. If the man only dream that he received such a present, this is an *idea*. Wherein lies the difference between this impression and this idea; between the dream and the reality? They are different classes or species, says Mr. Hume: so far all men will agree with him. But he adds, that they are distinguished only by different degrees of force and vivacity. Here he insinuates a tenet of his own, in contradiction to the common sense of mankind. Common sense convinces every man, that a lively dream is no nearer to a reality than a faint one; and that if a man should dream that he had all the wealth of Crœsus, it would not put one farthing in his pocket. It is impossible to fabricate arguments against such

undeniable principles, without confounding the meaning of words.

In like manner, if a man would persuade me, that the moon which I see, and my seeing it, are not two things, but one and the same thing, he will answer his purpose less by arguing this point in plain English, than by confounding the two under one name, such as that of an *impression:* for such is the power of words, that if we can be brought to the habit of calling two things that are connected, *by the same name,* we are the more easily led to believe them to be one and the same thing.

XXX. *Popular Acceptation of the word "Impression."*—Let us next consider the proper meaning of the word *impression* in English, that we may see how far it is fit to express either the operations of the mind, or their objects.

[When a figure is stamped upon a body by pressure, that figure is called an *impression,* as the impression of a seal on wax, of printing types, or of a copperplate, on paper. This seems now to be the literal sense of the word; the effect borrowing its name from the cause. But by *metaphor* or *analogy,* like most other words,* its meaning is extended so as to signify any change produced in a body by the operation of some external cause.] A blow of the hand makes no impression on a stone wall; but a battery of cannon may. The moon raises a tide in the ocean, but makes no impression on rivers and lakes.

When we speak of making any impression on the mind, the word is carried still farther from its literal meaning; use, however, which is the arbiter of language, authorises this application of it. As when we say that admonition and reproof make little impression on those who are confirmed in bad habits. The same discourse delivered in one way, makes a strong impression on the hearers; delivered in another way, it makes no impression at all.

It may be observed, that in such examples, an impression made on the mind always implies some change of purpose or will; some new habit produced, or some former habit weakened; some passion raised or allayed. When such changes are produced by persuasion, example, or any external cause, we say that such causes make an impression upon the mind. But when things are seen or heard, or apprehended, without producing any passion or emotion, we say that they make no impression.

XXXI. *In any sense the word Impression is not properly applied to signify the operations of the mind or their objects.*—[In the *most extensive sense,* an *impression* is a change produced in some *passive* subject by the operation of an external cause.] If

* Vide Essay II. Chap. iv. sect.

we suppose an active being to produce any change in itself by its own active power, this is never called an impression. It is the act or operation of the being itself, not an impression upon it. [From this it appears, that to give the name of an impression to any effect produced in the mind, *is to suppose that the mind does not act at all in the production of that effect.*] If seeing, hearing, desiring, willing, be operations of the mind, they cannot be impressions. If they be impressions, they cannot be operations of the mind. In the structure of all languages, they are considered as acts or operations of the mind itself, and the names given them imply this. To call them impressions, therefore, is to trespass against the structure, not of a particular language only, but of all languages.

If the word *impression* be an *improper word* to signify the *operations* of the mind, it is at least as improper to signify their *objects*; for would any man be thought to speak with propriety, who should say that the sun is an impression, that the earth and the sea are impressions?

XXXII. *All languages not equally adapted to the expression of true or false opinions.*—[It is commonly believed, and taken for granted, that every language, if it be sufficiently copious in words, is equally fit to express all opinions, whether they be true or false. I apprehend, however, that there is an exception to this general rule which deserves our notice.] There are certain common opinions of mankind, upon which the structure and grammar of all languages are founded. While these opinions are common to all men, there will be a great similarity in all languages that are to be found on the face of the earth. Such a similarity there really is; for we find in all languages the same parts of speech, the distinction of nouns and verbs, the distinction of nouns into adjective and substantive, of verbs into active and passive. In verbs we find like tenses, moods, persons and numbers. There are general rules of grammar, the same in all languages. [This similarity of structure in all languages shows an uniformity among men in those opinions upon which the structure of language is founded.]

If, for instance, we should suppose that there was a nation who believed that the things which we call attributes might exist without a subject, there would be in their language no distinction between adjectives and substantives, nor would it be a rule with them that an adjective has no meaning, unless when joined to a substantive. If there was any nation who did not distinguish between acting and being acted upon, there would in their language be no distinction between active and passive verbs, nor would it be a rule that the active verb must have an agent in the nominative case; but that, in the passive verb, the agent must be in an oblique case.

XXXIII. *Hume departs from the common significations of words.*—[The structure of all languages is grounded upon common notions, which Mr. Hume's philosophy opposes and endeavours to overturn. This no doubt led him to warp the common language into a conformity with his principles; but we ought not to imitate him in this, until we are satisfied that his principles are built on a solid foundation.]

XXXIV. 12. *Sensation distinct from all other acts of the mind.*—[*Sensation* is a name given by philosophers to an act of mind which may be distinguished from all others by this, that it hath no object distinct from the act itself.] Pain of every kind is an uneasy sensation. When I am pained, I cannot say that the pain I feel is one thing, and that my feeling it, is another thing. They are one and the same thing, and cannot be disjoined, even in imagination. Pain when it is not felt has no existence. It can be neither greater nor less in degree or duration, nor any thing else in kind, than it is felt to be. It cannot exist by itself, nor in any subject, but in a sentient being. No quality of an inanimate insentient being can have the least resemblance to it.

What we have said of pain may be applied to every other sensation. Some of them are agreeable, others uneasy, in various degrees. These being objects of desire or aversion, have some attention given to them; but many are indifferent, and so little attended to, that they have no name in any language.

XXXV. *Source of error as to the operations of the mind.*—[Most operations of the mind that have names in common language, are complex in their nature, and made up of various ingredients, or more simple acts; which, though conjoined in our constitution, must be disjoined by abstraction, in order to our having a distinct and scientific notion of the complex operation. In such operations, sensation for the most part makes an ingredient. Those who do not attend to the complex nature of such operations, are apt to resolve them into some one of the simple acts of which they are compounded, overlooking the others: and from this cause many disputes have been raised, and many errors have been occasioned with regard to the nature of such operations.]

XXXVI. *Another occasion of error as to our sensations.*—[The perception of external objects is accompanied with some sensation corresponding to the object perceived, and such sensations have, in many cases, in all languages, the same name with the *external object* which they always accompany. The difficulty of disjoining by abstraction, things thus constantly conjoined in the course of nature, and things which have one and the same name in all languages, has likewise been frequently *an occasion of errors* in the philosophy of the mind.] To avoid such errors, nothing is of more importance than to have a distinct

notion of that simple act of the mind which we call *sensation*, and which we have endeavoured to describe. By this means we shall find it more easy (1) to distinguish it from every *external object* that it accompanies, and (2) from every other *act of the mind* that may be conjoined with it. For this purpose it is likewise of importance, that the name of *sensation* should, in philosophical writings, be appropriated to signify this simple act of the mind, without including any thing more in its signification, or being applied to other purposes.

I shall add an observation concerning the word *feeling*. This word has two meanings. *First*, It signifies the perceptions we have of external objects by the sense of touch. When we speak of feeling a body to be hard or soft, rough or smooth, hot or cold; to feel these things is to perceive them by touch. They are external things, and that act of the mind by which we feel them is easily distinguished from the objects felt. *Secondly*, The word *feeling* is used to signify the same thing as *sensation*, which we have just now explained; and, in this sense, it has no object; the feeling and the thing felt are one and the same.

Perhaps betwixt feeling, taken in this last sense, and sensation, there may be this small difference, that sensation is most commonly used to signify those feelings which we have by our external senses and bodily appetites, and all our bodily pains and pleasures. But there are *feelings* of a nobler nature accompanying our affections, our moral judgments, and our determinations in matters of taste, to which the word *sensation* is less properly applied.

XXXVII. *Attention to the meanings of words necessary.*—[I have premised these observations on the meaning of certain words that frequently occur in treating of this subject, for two reasons, *first*, That I may be the better understood when I use them; and, *secondly*, That those who would make any progress in this branch of science, may accustom themselves to attend very carefully to the meaning of words that are used in it.] They may be assured of this, that the *ambiguity of words*,* and the vague and improper application of them, have thrown more darkness upon this subject than the subtlety and intricacy of things.

When we use common words, we ought to use them in the sense in which they are most commonly used by the best and purest writers in the language; and, when we have occasion to enlarge or restrict the meaning of a common word, or to give it more precision than it has in common language, the reader ought to have warning of this, otherwise we shall impose upon ourselves and upon him.

* "The greatest part of the questions and controversies that perplex mankind, depend on the doubtful and uncertain use of words."—Locke.

A very respectable writer has given us a good example of this kind, by explaining, in an appendix to his *Elements of Criticism*, the terms he has occasion to use. In that appendix, most of the words are explained on which I have been making observations. And the explication I have given, I think, agrees, for the most part, with his.

Other words that need explication shall be explained as they occur.

QUESTIONS FOR EXAMINATION.

One of the greatest impediments to the advancement of knowledge?

Causes of the steady progress of mathematical knowledge?

The foundations of all science?

What are terms?

Why do not *all* words admit of definition?

What words do and what do not admit of logical definition?

How are individuals distinguished?

Why cannot every species be defined?

Remarkable defect of the Aristotelian philosophy as to definition?

In which science do the terms least admit of definition?

Why must words be frequently used in pneumatology according to their vulgar significations?

The mind active according to the natural judgment of man?

Explain the distinctions between faculty, habits, and capacity, and between perception, conception, consciousness, and memory?

Original signification of perception, and occasional deviation from it?

Abuse of this term by Hume?

In what respect does conception differ from all the other operations of the mind?

Perception may be easily distinguished from conception?

The vulgar have the advantage of philosophers in distinguishing the operations of the mind from their objects?

The word "idea" employed in a twofold sense?

The first three principles of the Pythagoreans?

According to this sect there can be no certain knowledge of the objects of sense?

What change was made in this system by the latter Platonists?

How does the ancient theory of ideas differ from that of Malebranche?

In what respect does Aristotle's differ from the Platonists' theory?

The Aristotelian hypothesis?

How does it appear that the system of Locke is built upon that of Aristotle?

Disagreement between the theories of Aristotle and Democritus?

How do impressions and ideas differ?

Faults of this distinction?

What does the word "impression" denote in its literal—what in its most extensive sense?

This term cannot be correctly applied either to the operations or the objects of the mind?

How far is it incorrect to suppose, that every language is capable of expressing true or false opinions?

Hume must necessarily depart from the commonly received meanings of words?

Sensation may be distinguished from all other acts of the mind?

Correct explanations of terms particularly necessary in treating of pneumatology?

CHAPTER II.

PRINCIPLES TAKEN FOR GRANTED.

I. As there are words common to philosophers and to the vulgar which need no explication, so there are principles, common to both which need no proof, and which do not admit of direct proof.

II. One who applies to any branch of science must be come to years of understanding, and consequently must have exercised his reason and the other powers of his mind in various ways. He must have formed various opinions and principles, by which he conducts himself in the affairs of life. Of those principles, some are common to all men, being evident in themselves, and so necessary in the conduct of life, that a man cannot live and act according to the rules of common prudence without them.

III. All men that have common understanding agree in such principles, and consider a man as lunatic, or destitute of common sense, who denies or calls them in question. Thus, if any man were found of so strange a turn as not to believe his own eyes; to put no trust in his senses, nor have the least regard to their testimony, would any man think it worth while to reason gravely with such a person, and, by argument, to convince him of his error? Surely no wise man would. For before men can reason together, they must agree in first principles; and it is impossible to reason with a man who has no principles in common with you.

IV. *Fundamental principles of reasoning and knowledge.*—[There are, therefore, common principles which are the foundation of all reasoning and of all science. Such common principles seldom admit of direct proof, nor do they need it. Men need not to be taught them; for they are (1) such as all men of common understanding know, or (2) such, at least, as they give a ready assent to as soon as they are proposed and understood.]

V. *Of axioms.*—Such principles, when we have occasion to use them in science, are called *axioms*. And, although it be not absolutely necessary, yet it may be of great use to point out the principles or axioms on which a science is grounded.

VI. Thus, mathematicians, before they prove any of the propositions of mathematics, lay down certain axioms or common principles, upon which they build their reasonings. And, although those axioms be truths which every man knew before, such as, That the whole is greater than a part, That equal quantities added to equal quantities make equal sums; yet, when

we see nothing assumed in the proof of mathematical propositions, but such self-evident axioms, the propositions appear more certain, and leave no room for doubt or dispute.

VII. In all other sciences, as well as in mathematics, it will be found that there are a few common principles upon which all the reasonings in that science are grounded, and into which they may be resolved. If these were pointed out and considered, we should be better able to judge what stress may be laid upon the conclusions in that science. If the principles be certain, the conclusions justly drawn from them must be certain. If the principles be only probable, the conclusions can only be probable. If the principles be false, dubious, or obscure, the superstructure that is built upon them must partake of the weakness of the foundation.

VIII. Sir Isaac Newton, the greatest of natural philosophers, has given an example well worthy of imitation, by laying down the common principles or axioms, on which the reasonings in natural philosophy are built. Before this was done, the reasonings of philosophers in that science were as vague and uncertain as they are in most others. Nothing was fixed; all was dispute and controversy. But, by this happy expedient, a solid foundation is laid in that science, and a noble superstructure is raised upon it, about which there is now no more dispute or controversy among men of knowledge than there is about the conclusions of mathematics.

IX. *Difference between physical and mathematical axioms.*—[It may, however, be observed, that the first principles of natural philosophy are of a quite different nature from mathematical axioms. (1) They have not the same kind of evidence, (2) nor are they necessary truths, as mathematical axioms are.] They are such as these: That similar effects proceed from the same or similar causes; That we ought to admit of no other causes of natural effects but such as are true, and sufficient to account for the effects. These are principles which, though they have not the same kind of evidence that mathematical axioms have, yet have such evidence, that every man of common understanding readily assents to them, and finds it absolutely necessary to conduct his actions and opinions by them in the ordinary affairs of life.

X. *Advantage of laying down first principles in pneumatology.*—Though it has not been usual, yet I conceive it may be useful, to point out some of those things which I shall take for granted as first principles in treating of the mind and its faculties. [There is the more occasion for this, because very ingenious men, such as Des Cartes, Malebranche, Arnauld, Locke, and many others, have lost much labour by not distinguishing things which require proof from things which, though

they may admit of *illustration*, yet, being self-evident, do not admit of proof.] When men attempt to deduce such self-evident principles from others more evident, they always fall into inconclusive reasoning; and the consequence of this has been, that others, such as Berkeley and Hume, finding the arguments brought to prove such first principles to be weak and inconclusive, have been tempted first to doubt of them, and afterwards to deny them.

XI. *Caution as to their reception.*—[It is so irksome to reason with those who deny first principles, that wise men commonly decline it. Yet it is not impossible, that what is only a vulgar prejudice may be mistaken for a first principle.] Nor is it impossible, that what is really a first principle may, by the enchantment of words, have such a mist thrown about it, as to hide its evidence, and to make a man of candour doubt of it. Such cases happen more frequently perhaps in this science than in any other; but they are not altogether without remedy. There are ways by which the evidence of first principles may be made more apparent when they are brought into dispute; but they require to be handled in a way peculiar to themselves. Their evidence is not demonstrative, but intuitive. They require not proof, but to be placed in a proper point of view. This will be shown more fully in its proper place, and applied to those very principles which we now assume. In the mean time, *when they are proposed as first principles, the reader is put on his guard*, and *warned to consider whether they have a just claim* to that character.

1. *First*, then, I shall take it for granted, that I *think*, that I *remember*, that I *reason*, and, in general, that I really perform all those operations of mind of which I am conscious.

The operations of our minds are attended with *consciousness*; and this consciousness is the evidence, the only evidence which we have or can have of their existence. If a man should take it into his head to think or to say that his consciousness may deceive him, and to require proof that it cannot, I know of no proof that can be given him; he must be left to himself as a man that denies first principles, without which there can be no reasoning. Every man finds himself under a necessity of believing what consciousness testifies, and every thing that hath this testimony is to be taken as a first principle.

2. As by consciousness we know certainly the existence of our present thoughts and passions; so we know the past by *remembrance*. And when they are recent, and the remembrance of them fresh, the knowledge of them, from such distinct remembrance, is, in its certainty and evidence, next to that of consciousness.

3. But it is to be observed, that we are conscious of many

things to which we give little or no attention. We can hardly attend to several things at the same time; and our attention is commonly employed about that which is the object of our thought, and rarely about the thought itself. Thus, when a man is angry, his attention is turned to the injury done him, or the injurious person; and he gives very little attention to the passion of anger, although he is conscious of it. It is in our power, however, when we come to the years of understanding, to give attention to our own thoughts and passions, and the various operations of our minds. And when we make these the objects of our attention, either while they are present, or when they are recent and fresh in our memory, this act of the mind is called *reflection*.

We take it for granted, therefore, that, by attentive reflection, a man may have a clear and certain knowledge of the operations of his own mind; a knowledge no less clear and certain, than that which he has of an external object when it is set before his eyes.

This *reflection* is a kind of intuition; it gives a like conviction with regard to internal objects, or things in the mind, as the faculty of seeing gives with regard to objects of sight. A man must, therefore, be convinced beyond possibility of doubt of every thing with regard to the operations of his own mind, which he clearly and distinctly discerns by attentive reflection.

4. I take it for granted, that all the thoughts I am conscious of, or remember, are the thoughts of one and the same thinking principle, which I call *myself* or my *mind*. Every man has an immediate and irresistible conviction, not only of his present existence, but of his continued existence and identity, as far back as he can remember. If any man should think fit to demand a proof that the thoughts he is successively conscious of belong to one and the same thinking principle; if he should demand a proof that he is the same person to-day as he was yesterday, or a year ago, I know no proof that can be given him: he must be left to himself, either as a man that is lunatic, or as one who denies first principles, and is not to be reasoned with.

Every man of a sound mind finds himself under a necessity of believing his own identity, and continued existence. The conviction of this is immediate and irresistible; and if he should lose this conviction, it would be a certain proof of insanity, which is not to be remedied by reasoning.

5. I take it for granted, that there are some things which cannot exist by themselves, but must be in something else to which they belong, as qualities, or attributes.

Thus, motion cannot exist but in something that is moved. And to suppose that there can be motion while every thing is at rest, is a gross and palpable absurdity. In like manner, hard

ness and softness, sweetness and bitterness, are things which cannot exist by themselves; they are qualities of something which is hard or soft, sweet or bitter: that thing, whatever it be, of which they are qualities, is called their *subject*, and such qualities necessarily suppose a subject.

Things which may exist by themselves, and do not necessarily suppose the existence of any thing else, are called *substances*; and with relation to the qualities or attributes that belong to them, they are called the *subjects* of such qualities or attributes.

All the things which we immediately perceive by our senses, and all the things we are conscious of, are things which must be in something else as their subject. Thus by my senses I perceive figure, colour, hardness, softness, motion, resistance, and such like things. But these are qualities, and must necessarily be in something that is figured, coloured, hard, or soft, that moves or resists. It is not to these qualities, but to that which is the subject of them, that we give the name of *body*. If any man should think fit to deny that these things are qualities, or that they require any subject, I leave him to enjoy his opinion as a man who denies first principles, and is not fit to be reasoned with. If he has common understanding, he will find that he cannot converse half an hour without saying things which imply the contrary of what he professes to believe.

In like manner the things I am conscious of, such as thought, reasoning, desire, necessarily suppose something that thinks, that reasons, that desires. We do not give the name of *mind* to thought, reason, or desire; but to that being which thinks, which reasons, and which desires.

That every act or operation, therefore, supposes an agent, that every quality supposes a subject, are things which I do not attempt to prove, but take for granted. Every man of common understanding discerns this immediately, and cannot entertain the least doubt of it. In all languages we find certain words which, by grammarians, are called adjectives. Such words denote attributes, and every adjective must have a substantive to which it belongs; that is, every attribute must have a subject. In all languages we find active verbs, which denote some action or operation; and it is a fundamental rule in the grammar of all languages, that such a verb supposes a person; that is, in other words, that every action must have an agent. We take it therefore as a first principle, that goodness, wisdom, and virtue, can only be in some being that is good, wise, and virtuous; that thinking supposes a being that thinks; and that every operation we are conscious of, supposes an agent that operates, which we call *mind*.

6. I take it for granted, that in most operasions of the mind,

there must be an *object* distinct from the operation itself. I cannot see, without seeing something. To see without having any object of sight, is absurd. I cannot remember, without remembering something. [The thing remembered is *past*, while the remembrance of it is *present*; and therefore the operation and the object of it must be distinct things.] The operations of our minds are denoted, in all languages, by active *transitive* verbs, which, from their construction in grammar, require not only a person or agent, but likewise an object of the operation. Thus the verb *know*, denotes an operation of mind. From the general structure of language, this verb requires a person; I know, you know, or he knows. But it requires no less a noun in the accusative case, denoting the thing known; for, he that knows must know something; and to know, without having any object of knowledge, is an absurdity too gross to admit of reasoning.

XII. *Just limit of universal consent as a first principle.*—7. We ought likewise to take for granted, as first principles, things wherein we find an *universal agreement* among the learned and unlearned in the different nations and ages of the world. A consent of ages and nations,* of the learned and vulgar, ought at least to have great authority, unless we can show some prejudice, as universal as that consent is, which might be the cause of it. Truth is one, but error is infinite. There are many truths so obvious to the human faculties, that it may be expected that men should universally agree in them. And this is actually found to be the case with regard to many truths, against which we find no dissent, unless perhaps that of a few sceptical philosophers, who may justly be suspected, in such cases, to differ from the rest of mankind, through pride, obstinacy, or some favourite passion. [Where there is such *universal consent* in things *not deep nor intricate*, but which lie, as it were, on the surface, there is the greatest presumption that can be, that it is the natural result of the human faculties; and it must have great authority with every sober mind that loves truth. Major enim pars eo fere deferri solet quo a natura deducitur.—Cic. de Off. i. 41.] "For the greater part usually pursue that course to which they are led by nature."

XIII. *The universality of consent may be sufficiently ascertained.*—[Perhaps it may be thought that it is impossible to collect the opinions of all men upon any point whatsoever, and therefore, that this maxim can be of no use. But there are many

* "Nec vero alienum est, ad ea eligenda, quæ dubitationem afferunt, adhibere *doctos homines*, vel etiam usu peritos, et quid his de quoque officii genere placeat exquirere."—Cic. de Off. i. 41. "Nor indeed is it foreign from our purpose with a view to the selection of those things that occasion doubt, to call in the aid of men of learning or even of practical experience and to inquire what conclusions such persons form respecting each kind of duty

cases wherein it is otherwise.] Who can doubt, for instance, whether mankind have, in all ages, believed the existence of a material world, and that those things which they see and handle are real, and not mere illusions and apparitions? Who can doubt, whether mankind have universally believed, that every thing that begins to exist, and every change that happens in nature, must have a cause? Who can doubt, whether mankind have been universally persuaded that there is a right and a wrong in human conduct? Some things which, in certain circumstances, they ought to do, and other things which they ought not to do? [The universality of these opinions, and of many such that might be named, is sufficiently evident (1) from the whole tenor of men's conduct, as far as our acquaintance reaches, and from the records of history, in all ages and nations, that are transmitted to us.

There are other opinions that appear to be universal (2) from what is common in the structure of all languages, ancient and modern, polished and barbarous.] Language is the express image and picture of human thoughts; and from the picture, we may often draw very certain conclusions with regard to the original. We find in all languages the same parts of speech, nouns substantive and adjective, verbs active and passive, varied according to the tenses of past, present, and future; we find adverbs, prepositions, and conjunctions. There are general rules of syntax common to all languages. This *uniformity in the structure of language, shows a certain degree of uniformity in those notions upon which the structure of language is grounded.*

We find, in the structure of all languages, the distinction of acting and being acted upon, the distinction of action and agent, of quality and subject, and many others of the like kind; which shows that these distinctions are founded in the universal sense of mankind. We shall have frequent occasion to argue from the sense of mankind expressed in the structure of language; and therefore it was proper here to take notice of the force of arguments drawn from this topic.

8. I need hardly say, that I shall also take for granted such facts as are attested to the conviction of all sober and reasonable men, either by our senses, by memory, or by human testimony. Although some writers on this subject have disputed the authority of the senses, of memory, and of every human faculty, yet we find that such persons in the conduct of life, in pursuing their ends, or in avoiding dangers, pay the same regard to the authority of their senses, and other faculties, as the rest of mankind. By this they give us just ground to doubt of their candour in their professions of scepticism.

XIV. *Sceptics refute themselves.*—[This indeed has always been the fate of the few that have professed *scepticism*, that when they have done what they can to discredit their senses,

they find themselves, after all, under a necessity of trusting to them.] Mr. Hume has been so candid as to acknowledge this; and it is no less true of those who have not shown the same candour, for I never heard that any sceptic run his head against a post, or stepped into a kennel, because he did not believe his eyes.*

XV. Upon the whole, I acknowledge that *we ought to be cautious, that we do not adopt opinions as first principles, which are not entitled to that character.*—But there is surely the least danger of men being imposed upon in this way, when such principles openly lay claim to the character, and are thereby fairly exposed to the examination of those who may dispute their authority. We do not pretend that those things that are laid down as first principles, may not be examined, and that we ought not to have our ears open to what may be pleaded against their being admitted as such. Let us deal with them as an upright judge does with a witness, who has a fair character. He pays a regard to the testimony of such a witness, while his character is unimpeached. But if it can be shown that he is suborned, or that he is influenced by malice or partial favour, his testimony loses all its credit, and is justly rejected.

QUESTIONS FOR EXAMINATION.

Common principles, which are the foundation of all reasoning, how named and described?

Mathematical different from physical axioms?

The laying down of first principles more especially requisite in pneumatology?

Caution as to their reception?

First principles taken for granted by Reid?

(1.) The existence of the operations of our minds, proved by consciousness, memory, and reflection?—(2.) Our identity?—(3.) Qualities and their subject.—(4.) This subject as distinct from its operation?—(5.) Things concerning which all men agree?—(6.) The evidence of our senses, by memory or by human testimony?

Limit to the degree of respect due to universal consent?

From two circumstances the universality of opinion may safely be inferred?

How do sceptics refute themselves?

CHAPTER III.

OF HYPOTHESES.

I. EVERY branch of human knowledge hath its proper principles, its proper foundation and method of reasoning; and if we endeavour to build it upon any other foundation, it will never stand firm and stable. Thus the historian builds upon testimony, and rarely indulges conjecture. The antiquarian mixes conjec-

* Vide Essay II., Chap. VIII.—Of the Theory of Perception.

ture with testimony; and the former often makes the larger ingredient. The mathematician pays not the least regard either to testimony or conjecture, but deduces every thing, by demonstrative reasoning, from his definitions and axioms. Indeed, whatever is built upon conjecture, is improperly called science; for conjecture may beget opinion, but cannot produce knowledge. Natural philosophy must be built upon the phenomena of the material system, discovered by observation and experiment.

II. When men first began to philosophise, that is, to carry their thoughts beyond the objects of sense, and to inquire into the causes of things, and the secret operations of nature, it was very natural for them to indulge conjecture; nor was it to be expected that, in many ages, they should discover the proper and scientific way of proceeding in philosophical disquisitions. Accordingly we find that the most ancient systems in every branch of philosophy, were nothing but the conjectures of men famous for their wisdom, whose fame gave authority to their opinions. Thus, in early ages, wise men conjectured that this earth is a vast plain, surrounded on all hands by a *boundless ocean*. That from this ocean the sun, moon, and stars, emerge at their rising, and plunge into it again at their setting.

III. With regard to the mind, men in their rudest state are apt to conjecture, that the principle of life in a man is his breath; because the most obvious distinction between a living and a dead man is, that the one breathes, and the other does not. To this it is owing, that, in ancient languages, the word which denotes the soul, is that which properly signifies breath or air.

IV. As men advance in knowledge, their first conjectures appear silly and childish, and give place to others, which tally better with later observations and discoveries. Thus, one system of philosophy succeeds another, without any claim to superior merit, but this, that it is a more ingenious system of conjectures, and accounts better for common appearances.

V. To omit many ancient systems of this kind, Des Cartes, about the middle of the last century, dissatisfied with the *materia prima*, the *substantial forms*, and the *occult qualities* of the Peripatetics, conjectured boldly, that the heavenly bodies of our system are carried round by a vortex or whirlpool of subtile matter, just as straws and chaff are carried round in a tub of water. He conjectured, that the soul is seated in a small gland in the brain, called the *pineal gland*: that there, as in her chamber of presence, she receives intelligence of every thing that affects the senses, by means of a subtile fluid contained in the nerves, called the animal spirits; and that she dispatches these animal spirits, as her messengers, to put in motion the several muscles of the body, as there is occasion. By such conjectures as these, Des Cartes could account for every phenomenon

in nature, in such a plausible manner, as gave satisfaction to a great part of the learned world for more than half a century.

VI. Such conjectures in philosophical matters have commonly got the name of *hypotheses* or *theories*. And the invention of a hypothesis, founded on some slight probabilities, which accounts for many appearances of nature, has been considered as the highest attainment of a Philosopher. If the hypothesis hangs well together, is embellished by a lively imagination, and serves to account for common appearances; it is considered by many as having all the qualities that should recommend it to our belief; and all that ought to be required in a philosophical system.

VII. *Danger of receiving Hypotheses.*—[There is *such proneness in men of genius to invent hypotheses*, and *in others to acquiesce in them* as the utmost which the human faculties can attain in philosophy, that it is of the last consequence to the progress of real knowledge, that men should have a clear and distinct understanding of the nature of hypotheses in philosophy, and of the regard that is due to them.]

VIII. *The probability is considerably against the truth of Hypotheses.*—Although some conjectures may have a considerable degree of probability, yet it is evidently in the nature of conjecture to be uncertain. In every case, the assent ought to be proportioned to the evidence; for to believe firmly, what has but a small degree of probability, is a manifest abuse of our understanding. [Now, though we may, in many cases, form very probable conjectures concerning the works of men, every conjecture we can form with regard to the works of God, has as little probability as the conjectures of a child with regard to the works of a man.]

IX. The wisdom of God exceeds that of the wisest man, more than that of the wisest man exceeds the wisdom of a child. If a child were to conjecture how an army is to be formed in the day of battle; how a city is to be fortified, or a state governed; what chance has he to guess right? As little chance has the wisest man when he pretends to conjecture how the planets move in their courses, how the sea ebbs and flows, and how our minds act upon our bodies.

X. If a thousand of the greatest wits that ever the world produced, were, without any previous knowledge in anatomy, to sit down and contrive how, and by what internal organs, the various functions of the human body are carried on; how the blood is made to circulate, and the limbs to move, they would not in a thousand years hit upon anything like the truth.

XI. Of all the discoveries that have been made concerning the inward structure of the human body, never one was made by conjecture. Accurate observations of anatomists have brought to light innumerable artifices of nature in the contrivance of this

machine of the human body, which we cannot but admire as excellently adapted to their several purposes. But the most sagacious physiologist never dreamed of them till they were discovered. On the other hand, innumerable conjectures, formed in different ages, with regard to the structure of the body, have been confuted by observation, and none ever confirmed.

XII. What we have said of the internal structure of the human body, may be said, with justice, of every other part of the works of God, wherein any real discovery has been made. Such discoveries have always been made by patient observation, by accurate experiments, or by conclusions drawn by strict reasoning from observations and experiments; and such discoveries have always tended to refute, but not to confirm, the theories and hypotheses which ingenious men had invented.

XIII. As this is a fact confirmed by the history of philosophy in all past ages, it ought to have taught men, long ago, to treat with just contempt hypotheses in every branch of philosophy, and to despair of ever advancing real knowledge in that way. The Indian philosopher, being at a loss to know how the earth was supported, invented the hypothesis of a huge elephant; and this elephant he supposed to stand upon the back of a huge tortoise. This hypothesis, however ridiculous it appears to us, might seem very reasonable to other Indians, who knew no more than the inventor of it; and the same will be the fate of all hypotheses invented by men to account for the works of God: they may have a decent and plausible appearance to those who are not more knowing than the inventor; but, when men come to be more enlightened, they will always appear ridiculous and childish.

XIV. This has been the case with regard to hypotheses that have been revered by the most enlightened part of mankind for hundreds of years; and it will always be the case to the end of the world. [For, until the wisdom of men bear some proportion to the wisdom of God, their attempts to find out the structure of his works by the force of their wit and genius, will be vain.]

XV. *Disparity between natural and artificial works.*—The finest productions of human art are immensely short of the meanest works of nature. The nicest artist cannot make a feather, or the leaf of a tree. Human workmanship will never bear a comparison with divine. [Conjectures and hypotheses are the invention and the workmanship of men, and must bear proportion to the capacity and skill of the inventor; and therefore will always be very unlike to the works of God, which it is the business of philosophy to discover.]

XVI. The world has been so long befooled by hypotheses in all parts of philosophy, that it is of the utmost consequence to every man, who would make any progress in real knowledge, to

treat them with just contempt as the reveries of vain and fanciful men, whose pride makes them conceive themselves able to unfold the mysteries of nature by the force of their genius. A learned man, in an epistle to Des Cartes, has the following observation, which very much deserved the attention of that philosopher, and of all that come after him. "When men, sitting in their closet, and consulting only their books, attempt disquisitions into nature, they may indeed tell how they would have made the world, if God had given them that in commission; that is, they may describe chimeras, which correspond with the imbecility of their own minds, no less than the admirable beauty of the universe corresponds with the infinite perfection of its Creator; but without an understanding truly divine, they can never form such an idea to themselves as the Deity had in creating things."

XVII. Let us, therefore, lay down this as a fundamental principle in our inquiries into the structure of the mind, and its operations, that no regard is due to the conjectures or hypotheses of philosophers, however ancient, however generally received. Let us accustom ourselves to try every opinion by the touchstone of fact and experience. What can fairly be deduced from facts duly observed, or sufficiently attested, is genuine and pure; it is the voice of God, and no fiction of human imagination.

XVIII. *True test of hypotheses.*—The first rule of philosophising laid down by the great Newton, is this: "Causas rerum naturalium, non plures admitti debere, quam quæ et vera sint, et earum phænomenis explicandis sufficiant." ["No more causes, nor any other causes of natural effects ought to be admitted, but such as are both true, and are sufficient for explaining their appearances."] This is a golden rule; it is the true and proper test, by which what is sound and solid in philosophy may be distinguished from what is hollow and vain.

XIX. *Its application.*—If a philosopher, therefore, pretend to show us the cause of any natural effect, whether relating to matter or to mind; let us *first consider whether there be sufficient evidence that the cause he assigns does really exist.* If there be not, reject it with disdain as a fiction which ought to have no place in genuine philosophy. If the cause assigned really exist, *consider in the next place, whether the effect it is brought to explain necessarily follows from it.* Unless it have these two conditions, it is good for nothing.*

XX. When Newton had shown the admirable effects of gravitation in our planetary system, he must have felt a strong desire to know its cause. He could have invented a hypothesis for this purpose, as many had done before him. But his philo-

* "Hypotheses, if they are well made, are at least (1) great helps to the memory, and (2) often direct us to new discoveries."—Locke, book iv. chap. xii.

sophy was of another complexion. Let us hear what he says: "Rationem harum gravitatis proprietatum ex phænomenis non potui deducere, et hypotheses non fingo. Quicquid enim ex phænomenis non deducitur, hypothesis vocanda est. Et hypotheses, seu metaphysicæ, seu physicæ, seu qualitatum occultarium, seu mechanicæ, in philosophia experimentali locum non habent." "I have not been able to deduce from appearances the cause of these properties of gravity, and I do not frame hypotheses. For whatever is not deduced from appearances must be termed hypothesis. And hypotheses, whether regarding physics, metaphysics, occult qualities or mechanics, have no place in experimental philosophy."

QUESTIONS FOR EXAMINATION.

General caution against the adoption of hypotheses?
Strong probability against their truth exists *à priori*?
What is the true criterion of hypotheses?

CHAPTER IV.

OF ANALOGY

I. *Conclusions drawn from analogy entitled to our attention.*—It is *natural to men* to judge of things less known, by some similitude they observe, or think they observe, between them and things more familiar or better known. In many cases, we have no better way of judging. And where the things compared have really a great similitude in their nature, when there is reason to think that they are subject to the same laws, there may be a considerable degree of probability in conclusions drawn from analogy.

II. Thus, we may observe a very great similitude ☞ between this earth which we inhabit, and the other planets, Saturn, Jupiter, Mars, Venus, and Mercury. They all revolve round the sun, as the earth does, although at different distances, and in different periods. They borrow all their light from the sun, as the earth does. Several of them are known to revolve round their axis like the earth, and, by that means, must have a like succession of day and night. Some of them have moons, that serve to give them light in the absence of the sun, as our moon does to us. They are all, in their motions, subject to the same law of gravitation, as the earth is. From all this similitude, it is not unreasonable to think, that those planets may, like our earth, be the habitation of various orders of living creatures. There is some probability in this conclusion from analogy.

III. In medicine. ☞ Physicians must, for the most part, be

directed in their prescriptions by analogy. The constitution of one human body is so like to that of another, that it is reasonable to think, that what is the cause of health or sickness to one, may have the same effect upon another. And this generally is found true, though not without some exceptions.

☞ In politics, we reason, for the most part, from analogy. The constitution of human nature is so similar in different societies or commonwealths, that the causes of peace and war, of tranquillity and sedition, of riches and poverty, of improvement and degeneracy, are much the same in all.

IV. *But they should be carefully examined.*—Analogical reasoning, therefore, is not, in all cases, to be rejected. It may afford a greater or a less degree of probability, according as the things compared are more or less similar in their nature. [But it ought to be observed, that, as this kind of reasoning can afford only probable evidence at best; so unless great caution be used, we are apt to be led into error by it. *For men are naturally disposed to conceive a greater similitude in things than there really is.*] *

To give an instance of this: ☞ Anatomists, in ancient ages, seldom dissected human bodies; but very often the bodies of those quadrupeds, whose internal structure was thought to approach nearest to that of the human body. Modern anatomists have discovered many mistakes the ancients were led into, by their conceiving a greater similitude between the structure of men and of some beasts than there is in reality. By this, and many other instances that might be given, it appears, that conclusions built on analogy stand on a slippery foundation; and that we ought never to rest upon evidence of this kind, when we can have more direct evidence.

I know no author who has made a more just and a more happy use of this mode of reasoning, than Bishop Butler, in his "Analogy of Religion, Natural and Revealed, to the Constitution and Course of Nature." In that excellent work, the author does not ground any of the truths of religion upon analogy, as their proper evidence. He only makes use of analogy to answer objections against them. When objections are made against the truths of religion, which may be made with equal strength against what we know to be true in the course of nature, such objections can have no weight.

V. *Uses of analogy.*—[Analogical reasoning, therefore, may be of excellent use (1) in answering objections against truths which have *other* evidence. It may likewise (2) give a greater

* Berkeley says, "We should proceed warily in such things, for we are apt to lay too great a stress on *analogies*, and to the prejudice of truth, humour that eagerness of mind, whereby it is carried to extend its knowledge into general theorems."—Principles of Human Knowledge. Part i. sect. 106.

or a less degree of probability in cases where we can find no other evidence.] But all arguments, drawn from analogy, are still the weaker, the greater disparity there is between the things compared; and therefore must be weakest of all when we compare body with mind, because there are no two things in nature more unlike.

VI. *It is, however, a source of error with regard to the operations of the mind.*—[There is no subject in which men have always been so prone to form their notions by analogies of this kind, as in what relates to the mind.] We form an early acquaintance with material things by means of our senses, and are bred up in a constant familiarity with them.

Examples of errors of this class.—Hence we are apt to measure all things by them; and to ascribe to things most remote from matter, the qualities that belong to material things. It is for this reason, that mankind have, in all ages, been so prone to conceive the *mind itself to be some subtile kind of matter:* that they have been disposed to ascribe *human figure*, and *human organs*, not only to *angels*, but even to the *Deity*. Though we are conscious of the operations of our own minds when they are exerted, and are capable of attending to them, so as to form a distinct notion of them; this is so difficult a work to men, whose attention is constantly solicited by external objects, that *we give them names from things that are familiar*, and which are *conceived to have some similitude to them;* and the notions we form of them are no less analogical than the names we give them. Almost all the words, by which we express the operations of the mind, are borrowed from material objects. To *understand*, to *conceive*, to *imagine*, to *comprehend*, to *deliberate*, to *infer*, and many others, are words of this kind; so that the very language of mankind, with regard to the operations of our minds, is analogical. Because bodies are affected only by contact and pressure, *we are apt to conceive, that what* is an immediate object of thought, and *affects the mind, must be in contact with it*, and make some impression upon it. When we imagine anything, the very word leads us to think, that there must be some image in the mind, of the thing conceived. It is evident, that these notions are drawn from some similitude conceived between body and mind, and between the properties of body and the operations of mind.

To illustrate more fully that *analogical reasoning* from a supposed similitude of mind to body, which *I conceive to be the most fruitful source of errors* with regard to the *operations* of our minds, I shall give an instance of it.

☞ When a man is urged by contrary motives, those on one hand inciting him to do some action, those on the other to forbear it; he deliberates about it, and at last resolves to do it, or

not to do it. The contrary motives are here compared to the weights in the opposite scales of a *balance;* and there is not perhaps any instance that can be named of a more striking analogy between body and mind. Hence the phrases of *weighing motives*, of deliberating upon actions, are common to all languages.

VII. From this analogy, some philosophers draw very important conclusions. They say, that, as the balance cannot incline to one side more than the other, when the opposite weights are equal; so a man cannot possibly determine himself, if the motives on both hands are equal: and, as the balance must necessarily turn to that side which has most weight; so the man must necessarily be determined to that hand where the motive is strongest. And on this foundation, some of the schoolmen maintained, that, if a hungry ass were placed between two bundles of hay equally inviting, the beast must stand still and starve to death, being unable to turn to either, because there are equal motives to both. This is an instance of that analogical reasoning which I conceive ought never to be trusted: for, the analogy between a balance and a man deliberating, though one of the strongest that can be found between matter and mind, is too weak to support any argument. A piece of dead inactive matter, and an active intelligent being, are things very unlike; and because the one would remain at rest in a certain case, it does not follow that the other would be inactive in a case somewhat similar. The argument is no better than this, that, because a dead animal moves only as it is pushed, and, if pushed with equal force in contrary directions, must remain at rest, therefore the same thing must happen to a living animal; for surely the similitude between a dead animal and a living, is as great as that between a balance and a man.

VIII. *Recapitulation.*—The conclusion I would draw from all that has been said on analogy, is, that, in our inquiries concerning the mind, and its operations, (1) we ought never to trust to reasonings, drawn from some supposed similitude of body to mind; and (2) that we ought to be very much upon our guard, that we be not imposed upon by those analogical terms and phrases, by which the operations of the mind are expressed in all languages.

QUESTIONS FOR EXAMINATION.

Define, or describe, analogy, and state in what case it is most probably true?
How does analogy so frequently lead to erroneous conclusions?
What are its two uses, and in what science is it to be most carefully avoided?
Four remarkable errors into which this mode of reasoning has drawn metaphysical writers, p. 36.

CHAPTER V.

OF THE PROPER MEANS OF KNOWING THE OPERATIONS OF THE MIND.

I. *True source of all knowledge of the mind and of its operations.*—SINCE we ought to pay no regard to hypotheses, and to be very suspicious of analogical reasoning, it may be asked, from what source must the knowledge of the mind and its faculties be drawn?

I answer, [the chief and proper source of this branch of knowledge is accurate *reflection* upon the operations of our own minds.] Of this source we shall speak more fully, after making some remarks upon two others that may be subservient to it. [The *first* of them is, attention to the structure of language.

II. *Two auxiliary sources.*—The language of mankind is expressive of their thoughts, and of the various operations of their minds.] The various operations of the understanding, will, and passions, which are common to mankind, have various forms of speech corresponding to them in all languages, which are the signs of them, and by which they are expressed: and a due attention to the *signs* may, in many cases, give considerable light to the things signified by them.

There are in all languages modes of speech, by which men signify their judgment, or give their testimony; by which they accept or refuse; by which they ask information or advice; by which they command, or threaten, or supplicate; by which they plight their faith in promises and contracts. If such operations were not common to mankind, we should not find in all languages forms of speech by which they are expressed.

III. *General imperfections of language.*—[All languages, indeed, have their imperfections; *they can never be adequate to all the varieties of human thought;* and therefore things may be really distinct in their nature, and capable of being distinguished by the human mind, which are not distinguished in common language.] We can only expect, in the structure of languages, those distinctions which all mankind in the common business of life have occasion to make.

IV. *Coincidences.*—There may be peculiarities in a particular language, of the causes of which we are ignorant, and from which, therefore, we can draw no conclusion. [But whatever we find common to all languages, must have a common cause; must be owing to *some common notion or sentiment of the human mind.*]

☞ We gave some examples of this before, and shall here add another. All languages have a plural number in many of their nouns; from which we may infer, that all men have notions,

not of individual things only, but of attributes, or things which are common to many individuals; for no individual can have a plural number.

[Another (the second) source of information on this subject, is a due attention to the course of human actions (opinions) and conduct. The actions of men are effects: their sentiments, their passions, and their affections, are the causes of those effects; and we may, in many cases, form a judgment of the cause from the effect.*] The behaviour of parents towards their children gives sufficient evidence even to those who never had children, that the ☞ parental affection is common to mankind. It is easy to see, from the general conduct of men, what are the natural objects of their esteem, their admiration, their love, their approbation, their resentment, and of all their other original dispositions. It is obvious, from the conduct of men in all ages, that man is by his nature a social animal; that he delights to associate with his species; to converse, and to exchange good offices with them.

V. [Not only the *actions*, but even the *opinions* of men may sometimes give light into the frame of the human mind. The opinions of men may be considered as the effects of their *intellectual* powers, as their actions are the effects of their *active* principles.] Even the prejudices and errors of mankind, when they are general, must have some cause no less general, the discovery of which will throw some light upon the frame of the human understanding.

I conceive this to be the principal use of the history of philosophy. When we trace the history of the various philosophical opinions that have sprung up among thinking men, we are led into a labyrinth of fanciful opinions, contradictions, and absurdities, intermixed with some truths; yet we may sometimes find a clue to lead us through the several windings of this labyrinth: we may find that point of view which presented things to the author of the system, in the light in which they appeared to him. This will often give a consistency to things seemingly contradictory, and some degree of probability to those that appeared most fanciful.

VI. [The history of philosophy, considered as a map of the intellectual operations of men of genius, must always be *entertaining*, and may sometimes give us *views of the human understanding*, which could not easily be had any other way.]

VII. *Main source of our knowledge of the operations of the mind.*—I return to what I mentioned as the main source of information on this subject—[attentive *reflection* upon the operations of our own mind.]

* Vide sect. i. and ii. p. 38. In the first case we judge of the thing signified from the sign; in the second, of the cause from the effect.

All the notions we have of mind and of its operations, are, by Mr. Locke, called *ideas of reflection*. A man may have as distinct notions of remembrance, of judgment, of will, of desire, as he has of any object whatever. Such notions, as Mr. Locke justly observes, are got by the power of reflection. But what is this power of reflection? It is, says the same author, "that power by which the mind turns its view inward, and observes its own actions and operations." He observes elsewhere, "That the understanding, like the eye, whilst it makes us see and perceive all other things, takes no notice of itself; and that it requires art and pains to set it at a distance, and make it its own object." Cicero hath expressed this sentiment most beautifully.*

This power of the understanding to make its own operations its object, to attend to them, and examine them on all sides, is the power of reflection, by which alone we can have any distinct notion of the powers of our own or of other minds.

[This *reflection* ought to be distinguished from *consciousness*, with which it is too often confounded, even by Mr. Locke.] All men are conscious of the operations of their own minds, at all times, while they are awake; but there are few who reflect upon them or make them objects of thought.

From infancy, till we come to the years of understanding, we are employed solely about external objects; and, although the mind is conscious of its operations, it does not attend to them; its attention is turned solely to the external objects, about which those operations are employed. Thus, when a man is angry, he is conscious of his passion; but his attention is turned to the person who offended him, and the circumstances of the offence, while the passion of anger is not in the least the object of his attention.

VIII. *Reflection distinct from consciousness.*—I conceive this is sufficient to show the difference between consciousness of the operations of our minds, and reflection upon them; and to show that we may have the former without any degree of the latter. [The difference between *consciousness* and *reflection*, is like to the difference between a superficial view of an object which presents itself to the eye, while we are engaged about something else, and that attentive examination which we give to an object when we are wholly employed in surveying it.] [Attention is (1) a *voluntary* act; it requires an active exertion to begin and to continue it; and (2) it may be *continued* as long as we will; but consciousness is *involuntary* and of no continuance, *changing with every thought.*]

IX. *Reflection later than the other powers of the mind.*—The

* "At ut oculus, sic animus se non videns alia cernit."—Tusc. I. 28

power of reflection upon the operations of their own minds does not appear at all in children. Men must be come to some ripeness of understanding before they are capable of it. [Of all the powers of the human mind, it seems to be the *last that unfolds itself.*] Most men seem incapable of acquiring it in any considerable degree. Like all our other powers, it is greatly improved by exercise; and, until a man has got the habit of attending to the operations of his own mind, he can never have clear and distinct notions of them, nor form any steady judgment concerning them. His opinions must be borrowed from others, his notions confused and indistinct, and he may easily be led to swallow very gross absurdities. To acquire this habit, is a work of time and labour, even in those who begin it early, and whose natural talents are tolerably fitted for it; but the difficulty will be daily diminishing, and the advantage of it is great. They will thereby be enabled to think with precision and accuracy on every subject, especially on those subjects that are more abstract. They will be able to judge for themselves in many important points, wherein others must blindly follow a leader.

QUESTIONS FOR EXAMINATION.

The true source of all knowledge of the mind and of its operations twofold?
A general imperfection of all languages?
What advantage results from studying the history of philosophy?
Reflection different from consciousness?

CHAPTER VI.

OF THE DIFFICULTY OF ATTENDING TO THE OPERATIONS OF OUR OWN MINDS.

I. The *difficulty of attending to our mental operations* ought to be well understood, and justly estimated by those who would make any progress in this science; that they may neither, on the one hand, expect success without pains and application of thought; nor, on the other, be discouraged, by conceiving that the obstacles that lie in the way are insuperable, and that there is no certainty to be attained in it. I shall, therefore, endeavour to point out the causes of this difficulty, and the effects that have arisen from it, that we may be able to form a true judgment of both.

[1. *The number and quick succession of the operations of the mind* make it difficult to give due attention to them.] It is well known, that if a great number of objects be presented in quick succession, even to the eye, they are confounded in the memory and imagination. We retain a confused notion of the whole, and a more confused one of the several parts, especially if they are objects to which we have never before given particular atten-

tion. No succession can be more quick than that of thought. The mind is busy while we are awake, continually passing from one thought, and one operation, to another. The scene is constantly shifting. Every man will be sensible of this, who tries but for one minute to keep the same thought in his imagination,* without addition or variation. He will find it impossible to keep the scene of his imagination fixed. Other objects will intrude without being called, and all he can do is to reject these intruders as quickly as possible, and return to his principal object.

[2. In this exercise, *we go contrary to habits* which have been early acquired, and confirmed by long unvaried practice.] From infancy, we are accustomed to attend to objects of sense, and to them only; and, when sensible objects have got such strong hold of the attention by confirmed habit, it is not easy to dispossess them. When we grow up, a variety of external objects solicits our attention, excites our curiosity, engages our affections, or touches our passions; and the constant round of employment, about external objects, draws off the mind from attending to itself; so that nothing is more just than the observation of Mr. Locke before mentioned, "That the understanding, like the eye, while it surveys all the objects around it, commonly takes no notice of itself."

[3. The *operations* of the mind, from their very nature, *lead the mind to give its attention to some other object.* Our sensations, as will be shown afterwards, are natural signs, and turn our attention to the things signified by them; so much, that most of them, and those the most frequent and familiar, have no name in any language.] In perception, memory, judgment, imagination, and reasoning, there is an object distinct from the operation itself; and, while we are led by a strong impulse, to attend to the object, the operation escapes our notice. Our passions, affections, and all our active powers, have, in like manner, their objects which engross our attention, and divert it from the passion itself.

[4. To this we may add a just observation made by Mr. Hume, that, when the mind is agitated by any passion, as soon as we turn our attention from the object to the passion itself, *the passion subsides or vanishes*, and by that means escapes our inquiry.] This, indeed, is common to almost every operation of the mind: when it is exerted, we are conscious of it; but then we do not attend to the operation, but to its object. When the mind is drawn off from the object to attend to its own operation, that operation ceases, and escapes our notice.

5. As it is not sufficient to the discovery of mathematical truths, that a man be able to attend to mathematical figures; as it is necessary that he should have the ability to distinguish

* Vide Locke's Essay, book ii. chap. xiv. sect. 13—15.

accurately things that differ, and to discern clearly the various relations of the quantities he compares; an ability which, though much greater in those who have the force of genius than in others, yet even in them requires exercise and habit to bring it to maturity: [so, in order *to discover the truth in what relates to the operations of the mind,* it is not enough that a man be able to give attention to them; he must have the ability (1) to distinguish accurately their minute differences; (2) to resolve and analyse complex operations into their simple ingredients; (3) to unfold the ambiguity of words, which in this science is greater than in any other, and to give them the same accuracy and precision that mathematical terms have.] For, indeed, the same precision in the use of words; the same cool attention to the minute differences of things; the same talent for abstraction and analysing, which fits a man for the study of mathematics, is no less necessary in this. But [there is this great difference between the *two sciences,* that the objects of mathematics being things *external* to the mind, it is much more easy to attend to them, and fix them steadily in the imagination.]*

II. *Pneumatology hitherto insufficiently cultivated.*—The difficulty attending our inquiries into the powers of the mind, serves to account for some events respecting this branch of philosophy, which deserve to be mentioned.

While most branches of science have, either in ancient or in modern times, been highly cultivated, and brought to a considerable degree of perfection, this remains, to this day, in a very low state, and as it were in its infancy.

III. *Criterion of the maturity of a science.*—Every science invented by men must have its beginning and its progress; and, from various causes, it may happen, that one science shall be brought to a great degree of maturity, while another is yet in its infancy. [The maturity of a science may be judged of by this: when it contains a system of principles, and conclusions drawn from them, which are so firmly established, that, among thinking and intelligent men, there remains no doubt or dispute about them; so that those who come after may raise the superstructure higher, but shall never be able *to overturn what is already built,* in order to begin on a new foundation.]

IV. *Rise and progress of mathematics.*—Geometry seems to have been in its infancy about the time of Thales and Pytha-

* The difficulties that present themselves in attending to the operations of our minds arise from—(1) The number and quick succession of the operations themselves. (2) Our acting contrary to habit in attending to them. (3) Their natural tendency. (4) The evanescent character of the passions. (5) The difficulty of distinguishing accurately things that differ but little.

goras; because many of the elementary propositions, on which the whole science is built, are ascribed to them as the inventors. Euclid's Elements, which were written some ages after Pythagoras, exhibit a system of geometry which deserves the name of a science; and though great additions have been made by Appollonius, Archimedes, Pappus, and others among the ancients, and still greater by the moderns; yet what was laid down in Elucid's Elements was never set aside. It remains as the firm foundation of all future superstructures in that science.

Natural philosophy remained in its infant state near two thousand years after geometry had attained to its manly form: for natural philosophy seems not to have been built on a stable foundation, nor carried to any degree of maturity, till the last century. The system of Des Cartes, which was all hypothesis, prevailed in the most enlightened part of Europe till towards the end of last century. Sir Isaac Newton has the merit of giving the form of a science to this branch of philosophy; and it need not appear surprising, if the philosophy of the human mind should be a century or two later in being brought to maturity.

It has received great accessions from the labours of several modern authors; and perhaps wants little more to entitle it to the name of a science, but to be purged of certain hypotheses, which have imposed on some of the most acute writers on this subject, and led them into downright scepticism.

V. *A false analogy impeded the study of pneumatology.*—[What the ancients have delivered to us concerning the mind, and its operations, is almost entirely drawn, not from accurate reflection, but from some *conceived analogy between body and mind.*] And although the modern authors I formerly named have given more attention to the operations of their own minds, and by that means have made important discoveries; yet, by retaining some of the ancient analogical notions, their discoveries have been less useful than they might have been, and have led to scepticism.

VI. ☞ It may happen in science, as in *building*, that an error in the foundation shall weaken the whole; and the farther the building is carried on, this weakness shall become the more apparent and the more threatening. Something of this kind seems to have happened in our systems concerning the mind. The accession they have received by modern discoveries, though very important in itself, has thrown darkness and obscurity upon the whole, and has led men rather to scepticism than to knowledge. This must be owing to some fundamental errors that have not been observed; and when these are corrected, it is to be hoped, that the improvements that have been made will have their due effect.

The last effect I observe of the difficulty of inquiries into the powers of the mind, is, that there is no other part of human knowledge, in which ingenious authors have been so apt to run into strange paradoxes, and even into gross absurdities.

VII. *Some advantage derived from the paradoxes of philosophers.*—When we find philosophers maintaining, that there is no heat in the fire, nor colour in the rainbow; when we find the gravest philosophers, from Des Cartes down to Bishop Berkeley, mustering up arguments to prove the existence of a material world, and unable to find any that will bear examination: when we find Bishop Berkeley and Mr. Hume, the acutest metaphysicians of the age, maintaining, that there is no such thing as matter in the universe: that sun, moon, and stars, the earth which we inhabit, our own bodies, and those of our friends, are only ideas in our minds, and have no existence but in thought: when we find the last maintaining, that there is neither body nor mind; nothing in nature but *ideas and impressions, without any substance on which they are impressed:* that there is no certainty, nor indeed probability, even in mathematical axioms: I say, when we consider such extravagances of many of the most acute writers on this subject, we may be apt to think the whole to be only a dream of fanciful men, who have entangled themselves in cobwebs spun out of their own brain. [But we ought to consider, that the more closely and ingeniously men reason from false principles, the more absurdities they will be led into; and when *such absurdities help to bring to light the false principles from which they are drawn,* they may be the more easily forgiven.]

QUESTIONS FOR EXAMINATION.

Causes of the difficulties which arise in considering the operations of the understanding?

How may we judge of the maturity of any science?

Another source of error amongst ancient pneumatologists?

Advantages attending the paradoxes of the philosophers?

CHAPTER VII.

DIVISION OF THE POWERS OF THE MIND.

I. *Understanding and will.*—[The powers of the mind are so many, so various, and so *connected and complicated* in most of its operations, that there never has been any division of them proposed which is not liable to considerable objections. We shall therefore take that general division which is the most common, into the powers of *understanding* and those of *will.*] Under the will we comprehend our *active* powers, and all that

lead to action, or influence the mind to act; such as appetites, passions, affections. The understanding comprehends our *contemplative* powers; by which we perceive objects; by which we conceive or remember them; by which we analyse or compound them; and by which we judge and reason concerning them.

II. *The prevailing division not strictly logical.*—Although this general division may be of use in order to our proceeding more methodically in our subject, we are not to understand it as if, in those operations which are ascribed to the understanding, there were no exertion of will or activity, or as if the understanding were not employed in the operations ascribed to the will; for I conceive there is no operation of the understanding wherein the mind is not active in some degree. We have some command over our thoughts,* and can attend to this or to that, of many objects which present themselves to our senses, to our memory, or to our imagination. We can survey an object on this side or that, superficially or accurately, for a longer or a shorter time; so that [our *contemplative* powers are under the guidance and direction of the *active;* and the former never pursue their object, without being led and directed, urged or restrained by the latter:] and because the understanding is always more or less directed by the will, mankind have ascribed some degree of activity to the mind in its intellectual operations, as well as in those which belong to the will, and have expressed them by active verbs, such as seeing, hearing, judging, reasoning, and the like.

And as the mind exerts some degree of activity even in the operations of understanding, so it is certain, that there can be no act of will which is not accompanied with some act of understanding. The will must have an object, and that object must be apprehended or conceived in the understanding. It is therefore to be remembered, that [in most, if not all operations of the mind, *both faculties concur;* and we range the operation under that faculty which hath the largest share in it.]

III. *Ancient division of the operations of the intellect defective.*—[The *intellectual* powers are commonly divided into *simple apprehension, judgment,* and *reasoning.* As this division has in its favour the authority of antiquity, and of a general reception, it would be improper to set it aside without giving any reason; I shall therefore explain it briefly, and give the reasons why I choose to follow another.

IV. *These three operations not independent, nor do they include consciousness, perception, memory, &c.*—[It may be observed, that, without apprehension of the objects, concerning which we

* There are two things in every man's power in this case, according to Locke, —"1st. To mind and observe what the ideas are that take their turns *in* his understanding; or else, 2ndly, To direct the sort, and call in such as he hath a desire or use of."—Essay, book ii. chap. xiv. sect. 15.

judge, there can be no judgment; as little can there be reasoning without both apprehension and judgment: (1)* *these three operations*, therefore, *are not independent of each other*.] The second includes the first, and the third includes both the first and second: but the first may be exercised without either of the other two. It is on that account called ***simple apprehension***; that is, apprehension unaccompanied with any judgment about the object apprehended. This simple apprehension of an object is, in common language, called *having a notion*, or *having a conception* of the object, and by late authors is called *having an idea of it*. In speaking, it is expressed by a word, or by a part of a proposition, without that composition and structure which makes a complete sentence; as *a man, a man of fortune*. Such words, taken by themselves, signify simple apprehensions. They neither affirm nor deny; they imply no judgment or opinion of the thing signified by them, and therefore cannot be said to be either true or false.

The second operation in this division is *judgment;* in which, say the philosophers, there must be two objects of thought compared; and some agreement or disagreement, or, in general, some relation discerned between them; in consequence of which, there is an opinion or belief of that relation which we discern. This operation is expressed in speech by a proposition, in which some relation between the things compared is *affirmed* or *denied:* as when we say, *All men are fallible*.

Truth and falsehood are qualities which belong to judgment only; or to propositions by which judgment is expressed. Every judgment, every opinion, and every proposition, is either true or false. But words which neither affirm nor deny anything, can have neither of those qualities; and the same may be said of simple apprehensions, which are signified by such words.

The third operation is *reasoning;* in which, from two or more judgments, we draw a conclusion.

V. *Origin of this incomplete division.*—[This division of our intellectual powers corresponds perfectly with the account commonly given by philosophers, of the successive steps by which the mind proceeds in the acquisition of its knowledge:] which are these three: *first*, by the senses, or by other means, it is furnished with various simple apprehensions, notions, or ideas. These are the materials which nature gives it to work upon; and from the simple ideas it is furnished with by nature, it forms various others more complex. *Secondly*, by comparing its ideas, and by perceiving their agreements and disagreements, it forms its judgments. And, *lastly*, from two or more judgments, it deduces conclusions of reasoning.

Now, if all our knowledge is got by a procedure of this kind, certainly the threefold division of the powers of understanding, into simple apprehension, judgment, and reasoning, is the most

* Vide sect. vi. & vii. p. 48, seq.

natural, and the most proper, that can be devised. This theory and that division are so closely connected, that it is difficult to judge which of them has given rise to the other; and they must stand or fall together. But if all our knowledge is not got by a process of this kind; if there are other avenues of knowledge besides the comparing our ideas, and perceiving their agreements and disagreements, it is probable that there may be operations of the understanding which cannot be properly reduced under any of the three that have been explained.

VI. *Consciousness not comprehended in this division.*—Let us consider some of the most familiar operations of our minds, and see to which of the three they belong. I begin with (2) *consciousness.* I know that I think, and this of all knowledge is the most certain. Is that operation of my mind, which gives me this certain knowledge, to be called *simple apprehension?* No, surely. Simple apprehension neither affirms nor denies. It will not be said that it is by reasoning, that I know that I think. It remains, therefore, that it must be by judgment, that is, according to the account given of judgment, by comparing two ideas, and perceiving the agreement between them. But what are the ideas compared? They must be the idea of myself, and the idea of thought, for they are the terms of the proposition *I think.* According to this account then, first, I have the idea of myself, and the idea of thought; then, by comparing these two ideas, I perceive that I think.

Let any man who is capable of reflection judge for himself, whether it is by an operation of this kind that he comes to be convinced that he thinks? To me it appears evident, that the conviction I have that I think, is not got in this way; and therefore I conclude, either that *consciousness is not judgment,* or that judgment is not rightly defined to be the perception of some agreement or disagreement between two ideas.

VII. *Nor perception.*—The (3) *perception* of an object by my senses, is another operation of the understanding. I would know whether it be simple apprehension, or judgment, or reasoning. It is not simple apprehension, because I am persuaded of the existence of the object as much as I could be by demonstration. It is not judgment, if by judgment be meant the comparing ideas, and perceiving their agreements or disagreements. It is not reasoning, because those who cannot reason can perceive.

VIII. *Nor memory.*—I find the same difficulty in classing (4) *memory* under any of the operations mentioned.

IX. *Incomplete divisions impede the progress of metaphysical inquiry.*—There is not a more fruitful source of error in this branch of philosophy, than divisions of things which are taken to be complete when they are not really so. [To make a perfect division of any class of things, a man *ought to have the whole under his view at once.* But the greatest capacity very often is not

sufficient for this. Something is left out which did not come under the philosopher's view when he made his division: and *to suit this to the division, it must be made what nature never made it.*] This has been so common a fault of philosophers, that one who would avoid error ought to be suspicious of divisions, though long received, and of great authority, especially when they are grounded on a theory that may be called in question. In a subject imperfectly known, we ought not to pretend to perfect divisions, but to leave room for such additions or alterations as a more perfect view of the subject may afterwards suggest.

X. *First division of the powers of the mind.*—I shall not, therefore, attempt a complete enumeration of the powers of the human understanding. I shall only mention those which I propose to explain, and they are the following:

First, The powers we have by means of our external senses. *Secondly*, Memory. *Thirdly*, Conception. *Fourthly*, The powers of resolving and analysing complex objects, and compounding those that are more simple. *Fifthly*, Judging. *Sixthly*, Reasoning. *Seventhly*, Taste. *Eighthly*, Moral Perception: and *last* of all, Consciousness.

QUESTIONS FOR EXAMINATION.

The vulgar division of the powers of the mind?
It is not strictly logical?
Defect of the most ancient division of the intellectual powers?
Why are divisions professing to be perfect generally inadequate?
Faculties enumerated by Reid?

CHAPTER VIII.

OF SOCIAL OPERATIONS OF MIND.

I. *Second* division of the powers of the mind.*—THERE is another division of the powers of the mind, which, though it has been, ought not to be, overlooked by writers on this subject, because it has a real foundation in nature. [Some operations of our minds, from their very nature, are *social*, others are *solitary*.]

II. *All the operations of the mind not to be ascribed to the understanding or will solely.*—By the first, I understand [such operations as necessarily suppose an intercourse with some other intelligent being.] A man may understand and will; he may apprehend, and judge, and reason, though he should know of no intelligent being in the universe besides himself. But, when he asks information, or receives it; when he bears testimony, or receives the testimony of another; when he asks a favour, or accepts one; when he gives a command to his servant, or receives one from a superior; when he plights his faith in a

* Vide sect. x. chap. vii.

promise or contract; these are acts of social intercourse between intelligent beings, and can have no place in solitude. [They suppóse understanding and will; but *they suppose something more*, which is neither understanding nor will; that is, *society with other intelligent beings.* They may be called intellectual, because they can only be in intellectual beings: but they are neither simple apprehension, nor judgment, nor reasoning, nor are they any combination of these operations.]

To ask a question, is as simple an operation as to judge or to reason; yet it is neither judgment, nor reasoning, nor simple apprehension, nor is it any composition of these. Testimony is neither simple apprehension, nor judgment, nor reasoning. The same may be said of a promise, or of a contract. These acts of mind are perfectly understood by every man of common understanding; but, when philosophers attempt to bring them within the pale of their divisions, by analysing them, they find inexplicable mysteries, and even contradictions, in them. One may see an instance of this, of many that might be mentioned, in Mr. Hume's "Inquiry concerning the Principles of Morals," sect. 3, part 2, note, near the end.

III. *The attempt to reduce social to solitary operations, is analogous to a reduction erroneously made in ethics.*—[The attempts of philosophers to reduce the social operations under the common philosophical divisions, resemble very much the attempts of some philosophers to reduce all our social affections to certain modifications of self-love. The Author of our being intended us to be social beings, and has, for that end, given us social intellectual powers, as well as social affections. Both are original parts of our constitution, and the exertions of both no less natural than the exertions of those powers that are solitary and selfish.]

Our social intellectual operations, as well as our social affections, appear very early in life, before we are capable of reasoning; yet both suppose a conviction of the existence of other intelligent beings. When a child asks a question of his nurse, this act of his mind supposes not only a desire to know what he asks; it supposes likewise a conviction that the nurse is an intelligent being, to whom he can communicate his thoughts, and who can communicate her thoughts to him. How he came by this conviction so early, is a question of some importance in the knowledge of the human mind, and therefore worthy of the consideration of philosophers. But they seem to have given no attention either to this early conviction, or to those operations of mind which suppose it. Of this we shall have occasion to treat afterwards.

IV. *Primary intention of language.*—[All languages are fitted to express the social as well as the solitary operations of the mind. It may indeed be affirmed, that, to express the former, is the

primary and direct intention of language.] A man, who had no intercourse with any other intelligent being, would never think of language. He would be as mute as the beasts of the field; even more so, because they have some degree of social intercourse with one another, and some of them with man. When language is once learned, it may be useful even in our solitary meditations; and, by clothing our thoughts with words, we may have a firmer hold of them. But this was not its first intention; and the structure of every language shows that it is not intended solely for this purpose.

In every language, (a prayer or wish) a question, a command, a promise, which are social acts, can be expressed as easily and as properly as judgment, which is a solitary act. The expression of the last has been honoured with a particular name; it is called a proposition; it has been an object of great attention to philosophers; it has been analysed into its very elements, of subject, predicate, and copula. All the various modifications of these, and of propositions which are compounded of them, have been anxiously examined in many voluminous tracts. The expression of a question, of a command, or of a promise, is as capable of being analysed as a proposition is; but we do not find that this has been attempted; we have not so much as given them a name different from the operations which they express.*

Why have speculative men laboured so anxiously to analyse our solitary operations, and given so little attention to the social? I know no other reason but this, that, in the divisions that have been made of the mind's operations, the social have been omitted, and thereby thrown behind the curtain.

V. *What words best adapted to the expression of the social operations of the mind.*—In all languages, the *second person of verbs*, the pronoun of the second person, and the vocative case in nouns, are appropriated to the expression of social operations of mind, and could never have had place in language but for this purpose: nor is it a good argument against this observation, that, by a rhetorical figure, we sometimes address persons that are absent, or even inanimate beings, in the second person. For it ought to be remembered, that *all figurative ways of using words or phrases, suppose a natural and literal meaning of them.**

QUESTIONS FOR EXAMINATION.

Second division of the operations of the mind?

All the intellectual operations should not be ascribed to the understanding or will?

To what error in ethics is the reduction of social to solitary operations similar?

The primary intention of language?

What words are best adapted to express those operations?

* The author treats more fully of this class of "Ennunciations" in his "Analysis of Aristotle's Logic, chap. i. sect. 4, and chap. ii. sect. 6.

ESSAY II.

OF THE POWERS WE HAVE BY MEANS OF OUR EXTERNAL SENSES.*

CHAPTER I.

OF THE ORGANS OF SENSE

I. *The names of our perceptions are applied to other powers.*—Of all the operations of our minds, the perception of external objects is the most familiar. The senses come to maturity even in infancy, when other powers have not yet sprung up. They are common to us with brute animals, and furnish us with the objects about which our other powers are the most frequently employed. [We find it easy to attend to their operations; and *because they are familiar*, the names which properly belong to them are applied to other powers, which are thought to resemble them; for these reasons they claim to be first considered.]

II. The *perception* of external objects is one main link of that mysterious chain, which connects the material world with the intellectual. We shall find many things in this operation unaccountable; sufficient to convince us, that we know but little of our own frame; and that a perfect comprehension of our mental powers, and of the manner of their operation, is beyond the reach of our understanding.

III. *Just notions concerning the external senses absolutely necessary.*—In perception there are impressions upon the organs of sense, the nerves, and brain, which, by the laws of our nature, are followed by certain operations of mind. These two things are apt to be confounded; but ought most carefully to be distinguished. Some philosophers, without good reason, have concluded, that the impressions made on the body are the proper efficient cause of perception. Others, with as little reason, have concluded, that impressions are made on the mind similar to those made on the body. From these mistakes many others have arisen. ☞ The wrong notions men have rashly taken up with regard to *the senses*, have led to wrong notions with regard to other powers which are conceived to resemble them. Many important powers of mind have, especially of late, been called *internal*

* "Perception," and "Sensation;" the former is treated of in Essay II. chap. v., the latter in chap. xvi.

senses, from a supposed resemblance to the external; such as, the sense of beauty, the sense of harmony, the moral sense. [And it is to be apprehended, that errors, with regard to the external, have, from analogy, led to similar errors with regard to the internal; it is therefore of some consequence, even with regard to *other branches of our subject*, to have just notions concerning the external senses.]

IV. *Three laws of nature relative to perception.*—In order to this, we shall begin with some observations on the organs of sense, and on the impressions which in perception are made upon them, and upon the nerves and brain.

*First law.**—[We perceive no external object, but by means of certain bodily organs which God has given us for that purpose.] The Supreme Being who made us, and placed us in this world, hath given us such powers of mind as he saw to be suited to our state and rank in his creation. He has given us the power of perceiving many objects around us,—the sun, moon, and stars, the earth and sea, and a variety of animals, vegetables, and inanimate bodies. But our power of perceiving these objects is limited in various ways, and particularly in this; that without the organs of the several senses, we perceive no external object. We cannot see without eyes, nor hear without ears: it is not only necessary that we should have these organs, but that they should be in a sound and natural state. There are many disorders of the eye that cause total blindness; others that impair the powers of vision, without destroying it altogether; and the same may be said of the organs of all the other senses.

V. *Peculiar nature of the evidence on which these laws of nature rest.*—All this is so well known from experience, that it needs no proof; but it ought to be observed, that we know it from *experience only*. [We can give no reason for it, but that such is the will of our Maker. No man can show it to be impossible to the Supreme Being to have given us the power of perceiving external objects without such organs. We have reason to believe, that when we put off these bodies, and all the organs belonging to them, our perceptive powers shall rather be improved than destroyed or impaired. We have reason to believe that the Supreme Being perceives every thing in a much more perfect manner than we do, without bodily organs.] We have reason to believe that there are other created beings endowed with powers of perception more perfect and more extensive than ours, without any such organs as we find necessary.

VI. *Two cautions to be observed in our conclusions concerning the organs of perception.*—*First.* [We ought not, therefore, to conclude, that such bodily organs are, in their own nature,

* The second law will be found in chap. ii., sect i; the 3d in sect. ii. of the same chapter.

necessary to perception; but rather, that *by the will of* God, our power of perceiving external objects is limited and circumscribed by our organs of sense; so that we perceive objects in a certain manner, and in certain circumstances, and in no other.]

☞ If a man was shut up in a dark room, so that he could see nothing but through one small hole in the shutter of a window, would he conclude, that the hole was the cause of his seeing, and that it is impossible to see any other way? Perhaps, if he had never in his life seen but in this way, he might be apt to think so; but the conclusion is rash and groundless. He sees, because God has given him the power of seeing; and he sees only through this small hole, because his power of seeing is circumscribed by impediments on all other hands.

Secondly.—[Another necessary caution in this matter is, that we ought *not to confound the organs of perception with the being that perceives.* Perception must be the act of some being that perceives. The eye is not that which sees; it is only the organ by which we see. The ear is not that which hears; but the organ by which we hear; and so of the rest.]

☞ A man cannot see the satellites of Jupiter but by a telescope. Does he conclude from this, that it is the telescope that sees those stars? By no means; such a conclusion would be absurd. It is no less absurd to conclude that it is the eye that sees, or the ear that hears. The telescope is an artificial organ of sight, but it sees not. The eye is a natural organ of sight, by which we see; but the natural organ sees as little as the artificial.

☞ The eye is a machine most admirably contrived for refracting the rays of light, and forming a distinct picture of objects upon the retina; but it sees neither the object nor the picture. It can form the picture after it is taken out of the head; but no vision ensues. Even when it is in its proper place, and perfectly sound, it is well known, that an obstruction in the optic nerve takes away vision, though the eye has performed all that belongs to it.

VII. *Absurdity of confounding the organs of perception with the being that perceives.*—[If anything more were necessary to be said on a point *so evident,* we might observe, that if the faculty of seeing were in the eye, that of hearing in the ear, and so of the other senses, the necessary consequence of this would be, that the thinking principle, which I call myself, is not one, but many.] But this is contrary to the irresistible conviction of every man. When I say, I see, I hear, I feel, I remember, this implies that it is one and the same self that performs all these operations; and as it would be absurd to say, that my memory, another man's imagination, and a third man's reason, may make one individual intelligent being, it would be equally absurd to

say, that one piece of matter seeing, another hearing, and a third feeling, may make one and the same percipient being.

These sentiments are not new; they have occurred to thinking men from early ages. Cicero, in his "Tusculan Questions," lib. i. sect. 20, has expressed them very distinctly. Those who choose may consult the passage.*

QUESTIONS FOR EXAMINATION.

Whence does it arise that the names of our perceptions are applied to other operations?

Three laws of nature relative to perception?

Their evidence whence derived?

Two cautions to be observed as to the conclusions that may be deduced from them?

The organs themselves not the percipient being?

CHAPTER II.

OF THE IMPRESSIONS ON THE ORGANS, NERVES, AND BRAIN.

I. *Two modes of producing an impression on the organs.*—[*A second law*† *of our nature regarding perception* is, that we perceive no object, unless some *impression* is made upon the organ of sense, either (1) by the immediate application of the object, or (2) by some medium which passes between the object and the organ.]

[In two of our senses, to wit, *touch* and *taste*, there must be an *immediate application of the object to the organ*. In the other three, the object is perceived at a distance, but still by means of a medium, by which some impression is made upon the organ.]

☞ The effluvia of bodies drawn into the nostrils with the breath are the medium of smell; the undulations of the air are the medium of hearing; and the rays of light passing from visible objects to the eye are the medium of sight. We see no object unless rays of light come from it to the eye. We hear not the sound of any body, unless the vibrations of some elastic medium, occasioned by the tremulous motion of the sounding body, reach our ear. We perceive no smell, unless the effluvia of the smelling body enter into the nostrils. We perceive no taste, unless the sapid body be applied to the tongue, or some part of the organ of taste. Nor do we perceive any tangible

* "Ut facile intelligi possit, animum et videre et audire non eas partes quæ quasi fenestræ sint animi."—"Hence it may easily be understood, that it is the mind that both sees and hears, and not those faculties which are as it were its window."

† Vide p. 53 and 56.

quality of a body, unless it touch the hands, or some part of our body.

These are facts known from experience to hold universally and invariably, both in men and brutes. By this law of our nature, our powers of perceiving external objects are farther limited and circumscribed. Nor can we give any other reason for this, than that it is the will of our Maker, who knows best what powers, and what degrees of them, are suited to our state. We were once in a state, I mean in the womb, wherein our powers of perception were more limited than in the present, and, in a future state, they may be more enlarged.

II. *Third law of our nature regarding perception.*—[It is likewise a law of our nature,* that, in order to our perceiving objects, the *impressions* made upon the organs of sense *must be communicated to the nerves*, and by them to the brain. This is perfectly known to those who know any thing of anatomy.]

The nerves are fine cords, which pass from the brain, or from the spinal marrow, which is a production of the brain, to all parts of the body, dividing into smaller branches as they proceed, until at last they escape our eye-sight: and it is found by experience, that all the voluntary and involuntary motions of the body are performed by their means. When the nerves that serve any limb, are cut, or tied hard, we have then no more power to move that limb than if it was no part of the body.

As there are nerves that serve the muscular motions, so there are others that serve the several senses; and as without the former we cannot move a limb, so without the latter we can have no perception.

This train of machinery the wisdom of God has made necessary to our perceiving objects. Various parts of the body concur to it, and each has its own function. *First*, The object either immediately, or by some medium, must make an impression on the organ. The organ serves only as a medium, by which an impression is made on the nerve; and the nerve serves as a medium to make an impression upon the brain. Here the material part ends; at least we can trace it no farther; the rest is all intellectual.

III. *Our nerves a medium of perception.*—[The proof of these impressions upon the nerves and brain in perception is this, that, from many observations and experiments, it is found, that when the organ of any sense is perfectly sound, and has the impression made upon it by the object ever so strongly; yet, if the nerve which serves that organ be cut or tied hard, there is no perception: and it is well known, that disorders in the brain deprive us of the power of perception, when both the organ and its nerve are sound.]

* Vide pp. 53 and 55.

IV. *The changes caused in perception are denominated "impressions."* — There is therefore sufficient reason to conclude, that, in perception, (1) the object produces some change in the organ, (2) that the organ produces some change upon the nerve; and (3) that the nerve produces some change in the brain. And we give the name of an *impression* to those changes, because we have not a name more proper to express, in a general manner, any change produced in a body, by an external cause, without specifying the nature of that change. Whether it be pressure, or attraction, or repulsion, or vibration, or something unknown, for which we have no name, still it may be called an impression. But, with regard to the particular kind of this change or impression, philosophers have never been able to discover any thing at all.

But, whatever be the nature of those impressions upon the organs, nerves, and brain, we perceive nothing without them. Experience informs that it is so; but we cannot give a reason why it is so. In the constitution of man, perception, by fixed laws of nature, is connected with those impressions; but we can discover no necessary connexion. The Supreme Being has seen fit to limit our power of perception; so that we perceive not without such impressions; and this is all we know of the matter.

V. *Exact correspondence between impressions and the objects that produce them necessary to verify the evidence of our senses.* —[This, however, we have reason to conclude in general, that as the *impressions* on the organs, nerves, and brain, correspond exactly to the nature and conditions of the objects by which they are made; so our *perceptions* and *sensations* correspond to those impressions, and vary in *kind*, and in *degree*, as they vary. Without this exact correspondence, the information we receive by our senses would not only be imperfect, as it undoubtedly is, but would be fallacious, which we have no reason to think it is.]

QUESTIONS FOR EXAMINATION.

Impressions on our organs twofold?
What correspondence necessary to the verification of the evidence of our senses?

CHAPTER III.

HYPOTHESES CONCERNING THE NERVES AND BRAIN.

I. We are informed by anatomists, that although the two coats which inclose a nerve, and which it derives from the coats of the brain, are tough and elastic; yet the nerve itself has a very

small degree of consistence, being almost like marrow. It has, however, a fibrous texture, and may be divided and subdivided, till its fibres escape our senses. And as we know so very little about the texture of the nerves, there is great room left for those who choose to indulge themselves in conjecture.

The ancients conjectured that the nervous fibres are fine tubes, filled with a very subtile spirit or vapour, which they called *animal spirits;* that the brain is a gland, by which the animal spirits are secreted from the finer part of the blood, and their continual waste repaired; and that it is by these animal spirits that the nerves perform their functions. Des Cartes has shown how, by these animal spirits going and returning in the nerves, muscular motion, perception, memory, and imagination, are effected. All this he has described as distinctly as if he had been an eye-witness of all those operations. But it happens, that the tubular structure of the nerves was never perceived by the human eye, nor shown by the nicest injections; and all that has been said about animal spirits through more than fifteen centuries is mere conjecture.

II. Dr. Briggs, who was Sir Isaac Newton's master in anatomy, was the first, as far as I know, who advanced a new system concerning the nerves. He conceived them to be solid filaments, of prodigious tenuity; and this opinion, as it accords better with observation, seems to have been more generally received since his time. As to the manner of performing their office, Dr. Briggs thought, that, like musical cords, they have vibrations differing according to their length and tension. They seem, however, very unfit for this purpose, on account of their want of tenacity, their moisture, and being through their whole length in contact with moist substances: so that, although Dr. Briggs wrote a book upon this system, called "Nova Visionis Theoria," it seems not to have been much followed.

Sir Isaac Newton, in all his philosophical writings, took great care to distinguish his doctrines, which he intended to prove by just induction, from his conjectures, which were to stand or fall, according as future experiments and observations should establish or refute them. His conjectures he has put in the form of queries, that they might not be received as truths, but be inquired into, and determined according to the evidence to be found for or against them. Those who mistake his queries for a part of his doctrine do him great injustice, and degrade him to the rank of the common herd of philosophers, who have in all ages adulterated philosophy, by mixing conjecture with truth, and their own fancies with the oracles of nature. Among other queries, this truly great philosopher proposed this, Whether there may not be an elastic medium, or æther, immensely

more rare than air, which pervades all bodies, and which is the cause of gravitation; of the refraction and reflection of the rays of light; of the transmission of heat, through spaces void of air; and of many other phenomena? In the 23rd query subjoined to his Optics, he puts this question, with regard to the impressions made on the nerves and brain in perception, "Whether vision is effected chiefly by the vibrations of this medium, excited in the bottom of the eye by the rays of light, and propagated along the solid, pellucid, and uniform capillaments of the optic nerve? And whether hearing is effected by the vibrations of this or some other medium, excited by the tremor of the air in the auditory nerves, and propagated along the solid, pellucid, and uniform capillaments of those nerves?" And so with regard to the other senses.

III. What Newton only proposed as a matter to be inquired into, Dr. Hartley conceived to have such evidence, that, in his "Observations on Man," he has deduced, in a mathematical form, a very ample system concerning the faculties of the mind, from the doctrine of vibrations, joined with that of association.

His notion of the vibrations, excited in the nerves, is expressed in propositions 4 and 5, of the first part of his "Observations on Man." "Proposition 4, External objects impressed on the senses, occasion first in the nerves on which they are impressed, and then in the brain, vibrations of the small, and, as one may say, infinitesimal medullary particles. Prop. 5, The vibrations mentioned in the last proposition are excited, propagated, and kept up, partly by the æther, that is, by a very subtile elastic fluid; partly by the uniformity, continuity, softness, and active powers of the medullary substance of the brain, spinal marrow, and nerves."

The modesty and diffidence with which Dr. Hartley offers his system to the world, by desiring his reader "to expect nothing but hints and conjectures in difficult and obscure matters, and a short detail of the principal reasons and evidences in those that are clear; by acknowledging, that he shall not be able to execute, with any accuracy, the proper method of philosophising, recommended and followed by Sir Isaac Newton; and that he will attempt a sketch only for the benefit of future inquirers," seem to forbid any criticism upon it. One cannot, without reluctance, criticise what is proposed in such a manner, and with so good intention; yet, as the tendency of this system of vibrations is to make all the operations of the mind mere mechanism, dependent on the laws of matter and motion; and as it has been held forth by its votaries, *as in a manner demonstrated*, I shall make some remarks on that part of the system which relates to the impressions made on the nerves and brain in perception.

It may be observed in general, that Dr. Hartley's work con-

sists of a chain of propositions, with their proofs and corollaries, digested in good order, and in a scientific form. A great part of them, however, are, as he candidly acknowledges, conjectures and hints only; yet these are mixed with the propositions legitimately proved, without any distinction. Corollaries are drawn from them, and other propositions grounded upon them, which, all taken together, make up a system. A system of this kind resembles a chain, of which some links are abundantly strong, others very weak. The strength of the chain is determined by that of the weakest links; for if they give way, the whole falls to pieces, and the weight, supported by it, falls to the ground.

IV. Philosophy has been in all ages adulterated by hypotheses; that is, by systems built partly on facts, and much upon conjecture. It is pity that a man of Dr. Hartley's knowledge and candour should have followed the multitude in this fallacious track, after expressing his approbation of the proper method of philosophising, pointed out by Bacon and Newton. The last considered it as a reproach, when his system was called his hypothesis; and says, with disdain of such imputation, "Hypotheses non fingo." And it is very strange, that Dr. Hartley should not only follow such a method of philosophising himself, but that he should direct others in their inquiries to follow it. So he does in Proposition 87, Part I., where he deduces rules for the ascertainment of truth, from the rule of false in arithmetic, and from the art of deciphering; and in other places.

As to the vibrations and vibratiuncles, whether of an elastic æther, or of the infinitesimal particles of the brain and nerves, there may be such things for what we know; and men may rationally inquire whether they can find any evidence of their existence; but while we have no proof of their existence, to apply them to the solution of phenomena, and to build a system upon them, is, what I conceive, we call, building a castle in the air.

V. When men pretend to account for any of the operations of nature, the causes assigned by them ought, as Sir Isaac Newton has taught us, to have two conditions, otherwise they are good for nothing. *First*, They ought to be true, to have a real existence, and not to be barely conjectured to exist, without proof. *Secondly*, They ought to be sufficient to produce the effect.

As to the existence of vibratory motions in the medullary substance of the nerves and brain, the evidence produced is this: *First*, It is observed, that the sensations of seeing and hearing, and some sensations of touch, have some short duration and continuance. *Secondly*, Though there be no direct evidence that the sensations of taste and smell, and the greater

part of these of touch, have the like continuance; yet, says the author, analogy would incline one to believe, that they must resemble the sensations of sight and hearing in this particular. *Thirdly*, The continuance of all our sensations being thus established, it follows, that external objects impress vibratory motions on the medullary substance of the nerves and brain; because no motion, besides a vibratory one, can reside in any part for a moment of time.

This is the chain of proof; in which the first link is strong, being confirmed by experience; the second is very weak; and the third still weaker. For other kinds of motion, besides that of vibration, may have some continuance, such as rotation, bending or unbending of a spring, and perhaps others which we are unacquainted with; nor do we know whether it is motion that is produced in the nerves, it may be pressure, attraction, repulsion, or something we do not know. This, indeed, is the common refuge of all hypotheses, that we know no other way in which the phenomena may be produced, and therefore they must be produced in this way. There is, therefore, no proof of vibrations in the infinitesimal particles of the brain and nerves.

VI. It may be thought that the existence of an elastic vibrating æther stands on a firmer foundation, having the authority of Sir Isaac Newton. But it ought to be observed, that although this great man had formed conjectures about this æther near fifty years before he died, and had it in his eye during that long space as a subject of inquiry; yet it does not appear that he ever found any convincing proof of its existence, but considered it to the last as a question whether there be such an æther or not. In the premonition to the reader, prefixed to the second edition of his Optics, anno 1717, he expresses himself thus with regard to it: "Lest any one should think that I place gravity among the essential properties of bodies, I have subjoined one question concerning its cause; a question, I say, for I do not hold it as a thing established." If, therefore, we regard the authority of Sir Isaac Newton, we ought to hold the existence of such an æther as a matter not established by proof, but to be examined into by experiments; and I have never heard that, since his time, any new evidence has been found of its existence.

But, says Dr. Hartley, "supposing the existence of the æther and of its properties to be destitute of all direct evidence, still, if it serves to account for a great variety of phenomena, it will have an indirect evidence in its favour by this means." There never was an hypothesis invented by an ingenious man which has not this evidence in its favour. The Vortices of Des Cartes,

the Sylphs and Gnomes of Mr. Pope, serve to account for a great variety of phenomena.

VII. When a man has, with labour and ingenuity, wrought up a hypothesis into a system, he contracts a fondness for it, which is apt to warp the best judgment. This, I humbly think, appears remarkably in Dr. Hartley. In his preface, he declares his approbation of the method of philosophising recommended and followed by Sir Isaac Newton; but having first deviated from this method in his practice, he is brought at last to justify this deviation in theory, and to bring arguments in defence of a method diametrically opposite to it. "We admit," says he, "the key of a cipher to be a true one, when it explains the cipher completely." I answer, To find the key requires an understanding equal or superior to that which made the cipher. This instance, therefore, will then be in point, when he who attempts to decipher the works of nature by a hypothesis, has an understanding equal or superior to that which made them. The votaries of hypotheses have often been challenged to show one useful discovery in the works of nature that was ever made in that way. If instances of this kind could be produced, we ought to conclude, that Lord Bacon and Sir Isaac Newton have done great disservice to philosophy, by what they have said against hypotheses. But if no such instance can be produced, we must conclude, with those great men, that every system which pretends to account for the phenomena of nature by hypotheses or conjecture, is spurious and illegitimate, and serves only to flatter the pride of man with a vain conceit of knowledge which he has not attained.

The author tells us, "that any hypothesis that has so much plausibility as to explain a considerable number of facts, helps us to digest these facts in proper order, to bring new ones to light, and to make experimenta crucis for the sake of future inquirers."*

Let hypotheses be put to any of these uses as far as they can serve; let them suggest experiments, or direct our inquiries; but let just induction alone govern our belief.

"The rule of false affords an obvious and strong instance of the possibility of being led, with precision and certainty, to a true conclusion from a false position. And it is of the very essence of algebra, to proceed in the way of supposition."

This is true; but, when brought to justify the accounting for natural phenomena by hypotheses, is foreign to the purpose. When an unknown number, or any unknown quantity, is sought, which must have certain conditions, it may be found in a scientific manner, by the rule of false, or by algebraical analysis;

* Vide, p. 33, Note.

and, when found, may be synthetically demonstrated to be the number or the quantity sought, by its answering all the conditions required. But it is one thing to find a quantity which shall have certain conditions; it is a very different thing to find out the laws by which it pleases God to govern the world, and produce the phenomena which fall under our observation. And we can then only allow some weight to this argument in favour of hypotheses, when it can be shown, that the cause of any one phenomenon in nature has been, or can be found, as an unknown quantity is, by the rule of false, or by algebraical analysis. This, I apprehend, will never be, till the era arrives which Dr. Hartley seems to foretell, "when future generations shall put all kinds of evidences and inquiries into mathematical forms; and, as it were, reduce Aristotle's ten Categories, and Bishop Wilkins' forty Summa Genera, to the head of quantity alone, so as to make mathematics, and logic, natural history, and civil history, natural philosophy, and philosophy of all other kinds, coincide *omni ex parte*."

VIII. Since Sir Isaac Newton laid down the rules of philosophising in our inquiries into the works of nature, many philosophers have deviated from them in practice; perhaps few have paid that regard to them which they deserve. But they have met with very general approbation, as being founded in reason, and pointing out the only path to the knowledge of nature's works. Dr. Hartley is the only author I have met with who reasons against them, and has taken pains to find out arguments in defence of the exploded method of hypothesis.

Another condition which Sir Isaac Newton requires in the causes of natural things assigned by philosophers, is, that they be sufficient to account for the phenomena. Vibrations and vibratiuncles of the medullary substance of the nerves and brain, are assigned by Dr. Hartley to account for all our sensations and ideas, and, in a word, for all the operations of our minds. Let us consider very briefly how far they are sufficient for that purpose.

IX. *It would be injustice to this author to conceive him a materialist.*—He proposes his sentiments with great candour, and they ought not to be carried beyond what his words express. He thinks it a consequence of his theory, that matter, if it can be endued with the most simple kinds of sensation, might arrive at all that intelligence of which the human mind is possessed. He thinks that his theory overturns all the arguments that are usually brought for the immateriality of the soul, from the subtilty of the internal senses, and of the rational faculty; but he does not take upon him to determine whether matter can be endued with sensation or no. He even acknowledges, that matter and motion, however subtilly divided and reasoned upon,

yield nothing more than matter and motion still; and therefore he would not be any way interpreted so as to oppose the immateriality of the soul.

X. *Origin of the operations of the mind, according to Hartley's theory.*—It would, therefore, be unreasonable to require that his theory of vibrations should, in the proper sense, account for our sensations. It would, indeed, be ridiculous in any man to pretend, that thought of any kind must necessarily result from motion, or that vibrations in the nerves must necessarily produce thought, any more than the vibrations of a pendulum. Dr. Hartley disclaims this way of thinking, and therefore it ought not to be imputed to him. All that he pretends is, that, in the human constitution, there is a certain connexion between vibrations in the medullary substance of the nerves and brain, and the thoughts of the mind; so that the last depend entirely upon the first, and every kind of thought in the mind arises in consequence of a corresponding vibration, or vibratiuncle in the nerves and brain. Our sensations arise from vibrations, and our ideas from vibratiuncles, or miniature vibrations; and he comprehends, under these two words of *sensations* and *ideas*, all the operations of the mind.

But how can we expect any proof of the connexion between vibrations and thought, when the existence of such vibrations was never proved. The proof of their connexion cannot be stronger than the proof of their existence: for, as the author acknowledges, that we cannot infer the existence of the thoughts from the existence of the vibrations, it is no less evident, that we cannot infer the existence of vibrations from the existence of our thoughts. The existence of both must be known before we can know their connexion. As to the existence of our thoughts, we have the evidence of consciousness; a kind of evidence that never was called in question. But as to the existence of vibrations in the medullary substance of the nerves and brain, no proof has yet been brought.

All therefore we have to expect from this hypothesis, is, that, in vibrations considered abstractly, there should be a variety in kind and degree, which tallies so exactly with the varieties of the thoughts they are to account for, as may lead us to suspect some connexion between the one and the other. If the divisions and subdivisions of thought be found to run parallel with the divisions and subdivisions of vibrations, this would give that kind of plausibility to the hypothesis of their connexion, which we commonly expect even in a mere hypothesis; but we do not find even this.

For, to omit all those thoughts and operations which the author comprehends under the name of *ideas*, and which he thinks are connected with vibratiuncles; to omit the perception of external

objects, which he comprehends under the name of *sensations*, to omit the sensations, properly so called, which accompany our passions and affections, and to confine ourselves to the sensations which we have by means of our external senses, we can perceive no correspondence between the variety we find in their kinds and degrees, and that which may be supposed in vibrations.

We have five senses, whose sensations differ totally in kind. By each of these, excepting perhaps that of hearing, we have a variety of sensations, which differ specifically, and not in degree only. How many tastes and smells are there which are specifically different, each of them capable of all degrees of strength and weakness? Heat and cold, roughness and smoothness, hardness and softness, pain and pleasure, are sensations of touch that differ in kind, and each has an endless variety of degrees. Sounds have the qualities of acute and grave, loud and soft, with all different degrees of each. The varieties of colour are many more than we have names to express. How shall we find varieties in vibrations corresponding to all this variety of sensations which we have by our five senses only?

XI. *One case in which Hartley's theory explains the phenomena.*—I know two qualities of vibrations in an uniform elastic medium, and I know no more. They may be quick or slow in various degrees, and they may be strong or weak in various degrees; but I cannot find any division of our sensations that will make them tally with those divisions of vibrations. [If we had no other sensations but those of *hearing*, the theory would answer well: for sounds are either *acute* or *grave*, which may answer to *quick* or *slow* vibrations; or they are loud or soft, which answer to strong or weak vibrations. But then we have no variety of vibrations corresponding to the *immense variety of sensations* which we have by sight, smell, taste, and touch.

XII. Dr. Hartley has endeavoured to find out other two qualities of vibrations; to wit, that they may primarily affect one part of the brain or another, and that they may vary in their direction, according as they enter by different external nerves; but these seem to be added to make a number: for, as far as we know, vibrations in an uniform elastic substance, spread over the whole, and in all directions. However, that we may be liberal, we shall grant him four different kinds of vibrations, each of them having as many degrees as he pleases. Can he or any man reduce all our sensations to four kinds? We have five senses, and by each of them a variety of sensations, more than sufficient to exhaust all the varieties we are able to conceive in vibrations.

Dr. Hartley, indeed, was sensible of the difficulty of finding vibrations to suit all the variety of our sensations. His extensive knowledge of physiology and pathology could yield him but a feeble aid; and therefore he is often reduced to the necessity

of heaping supposition upon supposition, conjecture upon conjecture, to give some credibility to his hypothesis; and, in seeking out vibrations which may correspond with the sensations of one sense, he seems to forget that those must be omitted which have been appropriated to another.

XIII. Philosophers have accounted in some degree for our various sensations of sound, by the vibrations of elastic air. But it is to be observed, *first,* That we know that such vibrations do really exist; and, *secondly,* That they tally exactly with the most remarkable phenomena of sound. We cannot, indeed, show how any vibration should produce the sensation of sound. This must be resolved into the will of God, or into some cause altogether unknown. But we know, that as the vibration is strong or weak, the sound is loud or soft. We know, that as the vibration is quick or slow, the sound is acute or grave. We can point out that relation of synchronous vibrations which produces harmony or discord, and that relation of successive vibrations which produces melody: and all this is not conjectured, but proved by a sufficient induction. This account of sounds, therefore, is philosophical; although, perhaps, there may be many things relating to sound that we cannot account for, and of which the causes remain latent. The connexions described in this branch of philosophy are the work of God, and not the fancy of men.

XIV. *This theory may be rejected, since its first principles still require proof.*—If any thing similar to this could be shown in accounting for all our sensations by vibrations in the medullary substance of the nerves and brain, it would deserve a place in sound philosophy. [But, (1) when we are told of vibrations in a substance, which *no man could ever prove* to have vibrations, or to be capable of them; when such imaginary vibrations are brought to account for all our sensations, though (2) we can perceive no correspondence, in their *variety of kind and degree,* to the variety of sensations; the connexions described in such a system, are the creatures of human imagination, not the work of God.

☞ The rays of light make an impression upon the optic nerves; but they make none upon the auditory or olfactory. ☞ The vibrations of the air make an impression upon the auditory nerves; but none upon the optic or the olfactory. ☞ The effluvia of bodies make an impression upon the olfactory nerves; but make none upon the optic or auditory. No man has been able to give a shadow of reason for this. While this is the case, is it not better to confess our ignorance of the nature of those impressions made upon the nerves and brain in perception, than to flatter our pride with the conceit of knowledge which we have not, and to adulterate philosophy with the spurious brood of hypotheses?

CHAPTER IV.

FALSE CONCLUSIONS DRAWN FROM THE IMPRESSIONS BEFORE MENTIONED.

I. *Three false conclusions drawn from the impressions of external objects.*—[SOME philosophers among the ancients, as well as among the moderns, imagined that (1) man is nothing but *a piece of matter so curiously organized*, that the impressions of external objects produce in it sensation, perception, remembrance, and all the other operations we are conscious of.] This foolish opinion could only take its rise from observing the ☞ constant connexion which the Author of nature hath established between certain impressions made upon our senses, and our perception of the objects by which the impression is made; from which they weakly inferred, that those impressions were the proper efficient causes of the corresponding perception.

But no reasoning is more fallacious than this, that because two things are always conjoined, therefore one must be the cause of the other. ☞ Day and night have been joined in a constant succession since the beginning of the world; but who is so foolish as to conclude from this, that day is the cause of night, or night the cause of the following day? There is indeed nothing more ridiculous than to imagine that any motion or modification of matter should produce thought.

If one should tell of a telescope so exactly made as to have the power of seeing; of a whispering gallery that had the power of hearing; of a cabinet so nicely framed as to have the power of memory; or of a machine so delicate as to feel pain when it was touched; such absurdities are so shocking to common sense, that they would not find belief even among savages; yet it is the same absurdity to think that the impressions of external objects upon the machine of our bodies, can be the real efficient cause of thought and perception.

II. *Second false conclusion of the ancient philosophers.*—[Passing this, therefore, as a notion too absurd to admit of reasoning; (2) another conclusion very generally made by philosophers, is, that in perception an *impression* is made upon the *mind* as well as upon the organ, nerves, and brain.] ☞ Aristotle, as was before observed, thought that the form or image of the object perceived enters by the organ of sense, and strikes upon the mind. Mr. Hume gives the name of impressions to all our perceptions, to all our sensations, and even to the objects which we perceive. Mr. Locke affirms very positively, that the ideas of external objects are produced in our minds by impulse; "☞ that being the only way we can conceive bodies to operate in." It ought, however, to be observed, in justice to Mr. Locke,

that he retracted this notion in his first letter to the Bishop of Worcester, and promised in the next edition of his Essay to have that passage rectified; but either from forgetfulness in the author, or negligence in the printer, the passage remains in all the subsequent editions I have seen.

III. *The supposition that the mind is immaterial, overturns the second conclusion.*—[There is no prejudice more natural to man, than to conceive of the *mind as having* some *similitude to body* in its operations. Hence men have been prone to imagine, that as bodies are put in motion by some impulse or impression made upon them by contiguous bodies; so the mind is made to think and to perceive by some impression made upon it, or some impulse given to it by *contiguous* objects.] If we have such a notion of the mind as ☞ Homer had of his gods, who might be bruised or wounded with swords and spears, we may then understand what is meant by impressions made upon it by a body: [But if we conceive the mind to be *immaterial*, of which I think we have very strong proofs, we shall find it difficult to affix a meaning to *impressions made upon it*.]

IV. There is a *figurative* meaning of impressions on the mind which is well authorized, and of which we took notice in the ☞ observations made on that word; * but this meaning applies only to objects that are *interesting*. To say that an object which I see with perfect indifference makes an impression upon my mind, is not, as I apprehend, good English. If philosophers mean no more but that I see the object, why should they invent an improper phrase to express what every man knows how to express in plain English?

V. *The hypothesis of philosophers contrary to the vulgar opinion.*—But it is evident, from the manner in which this phrase is used by modern philosophers, that they mean not merely to express by it, my perceiving an object, but to explain the manner of perception. They think that the object perceived acts upon the mind, in some way similar to that in which one body acts upon another, by making an impression upon it. [The impression upon the mind is conceived to be something wherein *the mind is altogether passive*, and has some effect produced in it by the object. But this is a hypothesis which contradicts the common sense of mankind, and which ought not to be admitted without proof.]

☞ When I look upon the wall of my room, the wall does not act at all, nor is capable of acting; the perceiving it is an act or operation in me. That this is the common apprehension of mankind with regard to perception, is evident *from the manner of expressing it in all languages*.]

VI. *The analogy between body and mind not correctly applied*

* Vide Essay I. chap. i. p. 17.

by ancient metaphysicians.—The vulgar give themselves no trouble how they perceive objects; they express what they are conscious of; and they express it with propriety; but philosophers have an avidity to know how we perceive objects; and conceiving some similitude between a body that is put in motion, and a mind that is made to perceive, they are led to think, that as the body must receive some impulse to make it move, so the mind must receive some impulse or impression to make it perceive. [This analogy seems to be confirmed, by observing that we perceive objects only when they make some impression upon the organs of sense, and upon the nerves and brain; but it ought to be observed, that such is the nature of body, *that it cannot change its state, but by some force impressed upon it. This is not the nature of mind.* All that we know about it shows it to be in its nature living and active, and to have the power of perception in its constitution, but still within those limits to which it is confined by the laws of nature.]

It appears, therefore, that this phrase of the mind's having impressions made upon it by corporeal objects in perception, is either a phrase without any distinct meaning, and contrary to the propriety of the English language, or it is grounded upon a hypothesis which is destitute of proof. On that account, though we grant that in perception there is an impression made upon the organ of sense, and upon the nerves and brain, we do not admit that the object makes any impression upon the *mind.*

VII. *Third false conclusion of philosophers as to impressions made on the mind by external objects.*—[There is another (3) conclusion drawn from the impressions made upon the brain in perception, which I conceive to have no solid foundation, though it has been adopted very generally by philosophers. It is, that by the impressions made on the *brain*, *images* are formed of the object perceived; and that the mind, being seated in the brain as its chamber of presence, immediately perceives those images *only*, and has no perception of the external object but by them.*] This notion of our perceiving external objects, not immediately, but ☞ in certain images or species of them conveyed by the senses, seems to be the most ancient philosophical hypothesis we have on the subject of perception, and to have, with small variations, retained its authority to this day.

VIII. *Origin of our ideas according to the theories of the learned in various ages.*—Aristotle, as was before observed,† maintained, that the species, images, or forms of external objects, coming from the object, are impressed on the *mind.*‡ The followers of Democritus and Epicurus held the same thing with regard to slender films of subtile matter coming from the

* Vide, p. 67. † Pp. 12, 13.

‡ Newton, that the mind perceived them in its *sensorium.*

object, that Aristotle did with regard to his immaterial species or forms.

IX. *Plato rejected all knowledge derived from the senses.*—[Aristotle thought, that *every object of human understanding enters at first by the senses;* and that the notions got by them are by the powers of the mind refined and spiritualised, so as at last to become objects of the most sublime and abstracted sciences. Plato, on the other hand, had a very mean opinion of all the knowledge we get by the senses. He thought it did not deserve the name of knowledge, and could not be the foundation of science; *because the objects of sense are individuals only, and are in a constant fluctuation.* All science, according to him, must be employed about those eternal and immutable ideas which existed before the objects of sense, and are not liable to any change.] In this there was an essential difference between the systems of these two philosophers. The notion of eternal and immutable ideas, which Plato borrowed from the Pythagorean school, was totally rejected by Aristotle, who held it as a maxim, that there is nothing in the *intellect* which was not at first in the *senses.*

X. *The theories of Plato and Aristotle may have agreed as to the perception of external objects, for two reasons.*—But, notwithstanding this great difference in those two ancient systems, they might both agree *as to the manner in which we perceive objects by our senses.* [And that they did so, I think, is probable; because Aristotle, as far as I know, (1) neither takes notice of any difference between himself and his master upon this point, nor lays claim to his theory of the manner of our perceiving objects as his own invention. It is still more probable, (2) from the hints which Plato gives in the seventh book of his Republic, concerning the manner in which we perceive the objects of sense; which he compares to persons in a deep and *dark cave,** who see not external objects themselves, but only their shadows, by a light let into the cave through a small opening.

[It seems, therefore, probable, that the Pythagoreans and Platonists agreed with the Peripatetics in this *general theory of perception;* to wit, *that the objects of sense are perceived only by certain images,* or shadows of them, *let into the mind,* as into a "camera obscura."]

XI. *Opinions concerning the seat of the soul.*—The notions of the ancients were very various with regard to the seat of the soul. [Since it has been discovered, by the improvements in anatomy, that the nerves are the instruments of perception, and of the sensations accompanying it, and that the nerves ultimately terminate in the brain, it has been the general opinion of philosophers that the brain is the seat of the soul; and that

* Vide, Essay II. chap. vii. sect. i.

she perceives the images that are brought there, and external things only by means of them.]

Des Cartes, observing that the *pineal gland* is the only part of the brain that is single, all the other parts being double, and thinking that the soul must have one seat, was determined by this to make that gland the soul's habitation, to which, by means of the animal spirits, intelligence is brought of all objects that affect the senses.

Others have not thought proper to confine the habitation of the soul to the pineal gland, but to the brain in general, or to some part of it which they call the *sensorium*. Even the great Newton favoured this opinion, though he proposes it only as a query, with that modesty which distinguished him no less than his great genius. "Is not," says he, "the sensorium of animals the place where the sentient substance is present, and to which the sensible species of things are brought through the nerves and brain, that there they may be perceived by the mind present in that place? And is there not an incorporeal, living, intelligent, and omnipresent Being, who, in infinite space, as if it were in his sensorium, intimately perceives things themselves, and comprehends them perfectly, as being present to them; of which things, that principle in us, which perceives and thinks, discerns only, in its little sensorium, the *images* brought to it through the organs of the senses?"

His friend, Dr. Samuel Clarke, adopted the same sentiment with more confidence. In his papers to Leibnitz, we find the following passages: "Without being present to the images of the things perceived, it (the soul) could not possibly perceive them. A living substance can only there perceive where it is present, either to the things themselves, (as the omnipresent God is to the whole universe,) or to the images of things, (as the soul of man is in its proper sensory.) Nothing can any more act, or be acted upon, where it is not present, than it can be where it is not. We are sure the soul cannot perceive what it is not present to, because nothing can act, or be acted upon, where it is not."

Mr. Locke expresses himself so upon this point, that for the most part one would imagine, that he thought that the ideas, or images of things, which he believed to be the immediate objects of perception, are impressions upon the mind itself; yet, in some passages he rather places them in the brain, and makes them to be perceived by the mind there present. "There are some ideas," says he, "which have admittance only through one sense; and if the organs or the nerves, which are the conduits to convey them from without to their audience in the *brain*, ☞ *the mind's presence-room*, if I may so call it, are so disordered as not to perform their function, they have no postern to be admitted by.

"There seems to be a constant decay of all our ideas, even of those that are struck deepest. ☞ The *pictures drawn in our minds* are laid in fading colours. Whether the temper of the brain makes this difference, that in some it retains the characters drawn on it like marble, in others like free-stone, and in others little better than sand, I shall not inquire."

From these passages of Mr. Locke, and others of the like nature, it is plain that he thought that there are images of external objects conveyed to the brain. [But whether he thought with Des Cartes and Newton, that the images in the brain *are perceived by the mind there present, or that they are imprinted on the mind itself*, *is not so evident*.

XII. *Three principal objections to this hypothesis.*—Now, with regard to this hypothesis, there are three things that deserve to be considered, because the hypothesis leans upon them; and if any one of them fail, it must fall to the ground. [The *first* is, That the soul has its seat, or, as Mr. Locke calls it. its presence-room, in the brain. The *second*, That there are images formed in the brain of all the objects of sense. The *third*, That the mind or soul perceives these images in the brain; and that it perceive not external objects immediately, but only by means of their images.]

As to the *first* point. That the soul has its seat in the brain, this, surely, is not so well established as that we can safely build other principles upon it. There have been various opinions and much disputation about *the place of spirits; whether they have a place? and if they have, how they occupy that place?* After men had fought in the dark about these points for ages, the wiser part seem to have left off disputing about them, as matters beyond the reach of human faculties.

As to the *second* point, That images of all the objects of sense are formed in the brain, we may venture to affirm [(1), that there is no proof nor probability of this, with regard to *any* of the objects of sense; and (2) that with regard to the *greater part* of them, it is words without any meaning.]

[We have not the least evidence that the image of any external object is formed in the brain. (1) The brain has been dissected times innumerable by the nicest anatomists; every part of it examined by the naked eye, and with the help of microscopes; but no vestige of an image of any external object was ever found. (2) The brain seems to be the most improper substance that can be imagined for receiving or retaining images, being a soft moist medullary substance.]

XIII. *Locke seems to fall into the Peripatetic doctrine*—[But how are these images formed, or whence do they come? Says Mr. Locke, the organs of sense and nerves convey them from without. This is just the Aristotelian hypothesis of sensible species, which modern philosophers have been at great pains to refute, and which must be acknowledged to be one of the most

unintelligible parts of the Peripatetic system.] Those who consider species of colour, figure, sound, and smell, coming from the object, and entering by the organs of sense, as a part of the scholastic jargon, long ago discarded from sound philosophy, ought to have discarded images in the brain along with them. There never was a shadow of argument brought by any author, to show that an image of any external object ever entered by any of the organs of sense.

That external objects make some impression on the organs of sense, and by them on the nerves and brain, is granted; but *that those impressions resemble the objects they are made by*, so as that they may be called images of the objects, *is most improbable*. Every hypothesis that has been contrived shows that there can be no such resemblance; for neither the motions of animal spirits, nor the vibrations of elastic chords, or of elastic æther, or of the infinitesimal particles of the nerves, can be supposed to resemble the objects by which they are excited.

We know that, in vision, an image of the visible object is formed in the bottom of the eye by the rays of light. ☞ But we know also, that this image cannot be conveyed to the brain, because the optic nerve, and all the parts that surround it, are opaque and impervious to the rays of light; and there is no other organ of sense in which any image of the object is formed.

It is farther to be observed, that, with regard to some objects of sense, we may understand what is meant by an image of them imprinted on the brain; but with regard to most objects of sense, the phrase is absolutely unintelligible, and conveys no meaning at all. As to objects of sight, I understand what is meant by an image of their *figure* in the brain. But how shall we conceive an image of their *colour* where there is absolute darkness? And as to all other objects of sense, except figure and colour, I am unable to conceive what is meant by an image of them. Let any man say what he means by an image of heat and cold, an image of hardness or softness, an image of sound, of smell or taste. The word *image*, when applied to these objects of sense, has absolutely no meaning. Upon what a weak foundation, then, does this hypothesis stand, when it supposes that images of all the objects of sense are imprinted on the brain, being conveyed thither by the conduits of the organs and nerves.

XIV. The *third* point in this hypothesis, is, that the mind perceives the images in the brain, and external objects only by means of them. This is as improbable, as that there are such images to be perceived. [If our powers of perception be not altogether fallacious, the objects we perceive are not in our brain, but without us. We are so far from perceiving images in the brain, that we do not perceive our brain at all; nor would any man ever

have known that he had a brain, if anatomy had not discovered, by dissection, that the brain is a constituent part of the human body.]

XV. To sum up what has been said with regard to the organs of perception, and the impressions made upon our nerves and brain. It is a law of our nature, established by the will of the Supreme Being, that we perceive no external object but by means of the organs given us for that purpose. But these organs do not perceive. The eye is the organ of sight, but it sees not. A telescope is an artificial organ of sight. The eye is a natural organ of sight, but it sees as little as the telescope. We know how the eye forms a picture of the visible object upon the retina; but how this picture makes us see the object we know not; and if experience had not informed us that such a picture is necessary to vision, we should never have known it. We can give no reason why the picture on the retina should be followed by vision, while a like picture on any other part of the body produces nothing like vision.

XVI. *True cause of perception.*—It is likewise a law of our nature, that we perceive not external objects, unless certain impressions be made by the object upon the organ, and by means of the organ upon the nerves and brain. But of the nature of those impressions we are perfectly ignorant; and though they are conjoined with perception by the will of our Maker, yet it does not appear that they have any *necessary* connexion with it in their own nature, *far less that they can be the proper efficient cause of it.* [We perceive, because God has given us the power of perceiving, and not because we have impressions from objects. We perceive nothing without those impressions, because our Maker has limited and circumscribed our powers of perception, by such laws of nature as to his wisdom seemed meet, and such as suited our rank in his creation.]

QUESTIONS FOR EXAMINATION.

Three false conclusions have been drawn from the impressions previously described?

What opinion as to the nature of the soul completely overthrows the *second* false conclusion?

But the hypothesis itself is at variance with the common sense of mankind?

Why does Plato reject all knowledge derived from the senses?

Why is it probable that Aristotle and Plato coincided as to the perception of external objects?

How far may Locke be said to embrace the doctrine of the Peripatetics?

Cause of perception?

CHAPTER V.

THREE THINGS TO BE PARTICULARLY OBSERVED IN PERCEPTION.

1. *Of perception.*—IN speaking of the impressions made on our organs in perception, we build upon facts borrowed from anatomy and physiology, for which we have the testimony of our senses. But being now to speak of perception itself, which is solely an act of the mind, we must appeal to another authority. The operations of our minds are known not by sense, but by consciousness, the authority of which is as certain and as irresistible as that of sense.

In order, however, to our having a distinct notion of any of the operations of our own minds, it is not enough that we be conscious of them, for all men have this consciousness: it is farther necessary that we attend to them while they are exerted, and reflect upon them with care, while they are recent and fresh in our memory. It is necessary that, by employing ourselves frequently in this way, we get the habit of this attention and reflection; and therefore, for the proof of facts which I shall have occasion to mention upon this subject, I can only appeal to the reader's own thoughts, whether such facts are not agreeable to what he is conscious of in his own mind.

[If, therefore, we attend to that act of our mind which we call the perception of an external object of sense, we shall find in it these three things. *First*, some conception or notion of the object perceived. *Secondly*, a strong and irresistible conviction and belief of its present existence. And, *thirdly*, that this conviction and belief are *immediate*, and not the effect of reasoning.]

First, It is impossible to perceive an object without having some notion or conception of that which we perceive. We may indeed conceive an object which we do not perceive; but when we perceive the object, we must have some conception of it at the same time; and we have commonly a more clear and steady notion of the object while we perceive it, than we have from memory or imagination when it is not perceived. Yet, even in perception, the notion which our senses give of the object may be more or less clear, more or less distinct, in all possible degrees.

☞ Thus we see more distinctly an object at a small than at a great distance. An object at a great distance is seen more distinctly in a clear than in a foggy day. An object seen indistinctly with the naked eye, on account of its smallness, may be seen distinctly with a microscope. The objects in this room will be seen by a person in the room less and less distinctly as the light of the day fails; they pass through all the various degrees of distinctness according to the degrees of the light, and at last, in

total darkness, they are not seen at all. What has been said of the objects of sight is so easily applied to the objects of the other senses, that the application may be left to the reader.

II. *Our notion of an external object twofold.*--[In a matter so obvious to every person capable of reflection, it is necessary only farther to observe, that (1) the notion which we get of an object, merely by our external sense, ought not to be confounded with (2) that more scientific notion which a man, come to the years of understanding, may have of the same object, by attending to its various attributes, or to its various parts, and their relation to each other, and to the whole.] ☞ Thus the notion which a child has of a jack for roasting meat, will be acknowledged to be very different from that of a man who understands its construction, and perceives the relation of the parts to one another, and to the whole. The child sees the jack and every part of it as well as the man: the child, therefore, has all the notion of it which sight gives; whatever there is more in the notion which the man forms of it, must be derived from other powers of the mind, which may afterwards be explained. This observation is made here only, that we may not confound the operations of different powers of the mind, which, by being always conjoined after we grow up to understanding, are apt to pass for one and the same.

Secondly, In perception we not only have a notion *more or less distinct* of the object perceived, but *also an irresistible conviction and belief of its existence*. This is always the case when we are certain that we perceive it. There may be a perception so faint and indistinct, as to leave us in doubt whether we perceive the object or not. Thus, when a star begins to twinkle as the light of the sun withdraws, one may, for a short time, think he sees it, without being certain, until the perception acquires some strength and steadiness. When a ship just begins to appear in the utmost verge of the horizon, we may at first be dubious whether we perceive it or not: but when the perception is in any degree clear and steady, there remains no doubt of its reality; and when the reality of the perception is ascertained, the existence of the object perceived can no longer be doubted.

III. *Belief in the truth of our senses universally prevalent.*—[*By the laws of all nations*, in the most solemn judicial trials wherein men's fortunes and lives are at stake, the sentence passes according to the testimony of eye or ear witnesses of good credit. An upright judge will give a fair hearing to every objection that can be made to the integrity of a witness, and allow it to be possible that he may be corrupted; but no judge will ever suppose, that witnesses may be imposed upon by trusting to their eyes and ears:] and if a sceptical counsel should plead against the testimony of the witnesses, that they had no other evidence for

what they declared, but the testimony of their eyes and ears, and that we ought not to put so much faith in our senses, as to deprive men of life or fortune upon their testimony; surely no upright judge would admit a plea of this kind. I believe no counsel, however sceptical, ever dared to offer such an argument; and, if it was offered, it would be rejected with disdain.

Can any stronger proof be given, that it is the universal judgment of mankind that the evidence of sense is a kind of evidence which we may securely rest upon in the most momentous concerns of mankind: that it is a kind of evidence against which we ought not to admit any reasoning; and therefore, that to reason either for or against it, is an insult to common sense?

IV. *Two exceptions to this universal assent.*—The whole conduct of mankind, in the daily occurrences of life, as well as the solemn procedure of judicatories in the trial of causes civil and criminal, demonstrates this. I know only of two exceptions that may be offered against this being the universal belief of mankind.

[The *first* exception is that of some *lunatics*, who have been persuaded of things that seem to contradict the clear testimony of their senses. It is said there have been lunatics and hypochondriacal persons, who seriously believed themselves to be made of glass;* and, in consequence of this, lived in continual terror of having their brittle frame shivered into pieces.]

[All I have to say to this is, that our minds, in our present state, are, as well as our bodies, liable to strange disorders; and as we do not judge of the natural constitution of the body, from the disorders or diseases to which it is subject from accidents, so neither ought we to judge of the natural powers of the mind from its disorders, but from its sound state.] It is natural to man, and common to the species, to have two hands and two feet; yet I have seen a man, and a very ingenious one, who was born without either hands or feet. It is natural to man to have faculties superior to those of brutes; yet we see some individuals, whose faculties are not equal to those of many brutes; and the wisest man may, by various accidents, be reduced to this state. General rules that regard those whose intellects are sound, are not overthrown by instances of men whose intellects are hurt by any constitutional or accidental disorder.

[The other (*second*) exception that may be made to the principle we have laid down, is that of some philosophers who have maintained, that the testimony of sense is fallacious, and therefore ought never to be trusted. Perhaps it might be a sufficient answer to this to say, that there is nothing so absurd which some

* "Others who have thought themselves made of glass, have used the caution necessary to preserve such brittle bodies."—Locke's Essay, book ii. chap. xi. sect. 13.

philosophers have not maintained. It is one thing to *profess* a doctrine of this kind, another seriously to *believe* it, and to be governed by it in the conduct of life.] It is evident, that a man who did not believe his senses could not keep out of harm's way an hour of his life; yet, in all the history of philosophy, we never read of any sceptic that ever stepped into fire or water because he did not believe his senses, or that showed, in the conduct of life, less trust in his senses than other men have.* This gives us just ground to apprehend that philosophy was never able to conquer that natural belief which men have in their senses; and that all their subtile reasonings against this belief were never able to persuade themselves.

It appears, therefore, that the clear and distinct testimony of our senses carries irresistible conviction along with it, to every man in his right judgment.

IV. *Third thing to be particularly noticed in "perception."*—I observed, *thirdly*, That this conviction is not only irresistible, but it is *immediate*; that is, *it is not by a train of reasoning* and argumentation that we come to be convinced of the existence of what we perceive; we ask no argument for the existence of the object, but that we perceive it; perception commands our belief upon its own authority, and disdains to rest its authority upon any reasoning whatsoever.]

V. *Limit to our belief of the existence of external objects.*—The conviction of a truth may be irresistible, and yet not immediate. ☞ Thus, my conviction that the three angles of every plain triangle are equal to two right angles, is irresistible, but it is not immediate: I am convinced of it by demonstrative reasoning. There are other truths in mathematics of which we have not only an irresistible, but an immediate conviction. Such are the axioms. Our belief of the axioms in mathematics is not grounded upon argument. Arguments are grounded upon them, but their evidence is discerned immediately by the human understanding.

It is, no doubt, one thing to have an immediate conviction of a self-evident axiom; it is another thing to have an immediate conviction of the existence of what we see: but the conviction is equally immediate and equally irresistible in both cases. No man thinks of seeking a reason to believe what he sees; and, before we are capable of reasoning, we put no less confidence in our senses than after. The rudest savage is as fully convinced of what he sees, and hears, and feels, as the most expert logician. The constitution of our understanding determines us to hold the truth of a mathematical axiom as a first principle, from which other truths may be deduced, but it is deduced from none; and the constitution of our power of perception determines us to

* Vide page 29.

hold the existence of what we distinctly perceive as a first principle, from which other truths may be deduced, but it is deduced from none. [What has been said of the irresistible and immediate belief of the existence of objects distinctly perceived, I mean only to affirm with regard to persons so far advanced in understanding, as *to distinguish objects of mere imagination from things which have a real existence.*] Every man knows that he may have a notion of Don Quixote or of Garagantua, without any belief that such persons ever existed; and that of Julius Cæsar and of Oliver Cromwell, he has not only a notion, but a belief that they did really exist. [But whether children, from the time that they begin to use their senses, make a distinction between things which are only conceived or imagined, and things which really exist, may be doubted.] Until we are able to make this distinction, we cannot properly be said to believe or to disbelieve the existence of anything. [The belief of the existence of anything seems to suppose a notion of existence: *a notion too abstract*, perhaps, to enter into the mind of an infant.] I speak of the power of perception in those that are adult, and of a sound mind, who believe that there are some things which do really exist; and that there are many things conceived by themselves, and by others, which have no existence. That such persons do invariably ascribe existence to every thing which they distinctly perceive, without seeking reasons or arguments for doing so, is perfectly evident from the whole tenor of human life.

VI. *Impossible to account for our power of perceiving external objects, &c.*—The account I have given of our perception of external objects, is intended as a faithful delineation of what every man, come to years of understanding, and capable of giving attention to what passes in his own mind, may feel in himself. In *what manner* the notion of external objects, and the immediate belief of their existence, is produced by means of our senses, I am not able to show, and I do not pretend to show. [If the power of perceiving external objects in certain circumstances, be a part of the *original* constitution of the human mind, all attempts to account for it will be vain: no other account can be given of the constitution of things, but *the will of Him that made them.* As we can give no reason why matter is extended and inert, why the mind thinks, and is conscious of its thoughts, but the will of Him who made both: so I suspect we can give no other reason why, in certain circumstances, we perceive external objects, and in others do not.]

VII. *The manner in which ideas of "perception" are acquired consistent with the goodness of God.*—The Supreme Being intended that we should have such knowledge of the material objects that surround us, as is necessary in order to our supplying the wants of nature, and avoiding the dangers to which we

are constantly exposed; and he has admirably fitted our powers of perception to this purpose. If the intelligence we have of external objects were to be got by *reasoning only*, the greatest part of men would be destitute of it; for the greatest part of men hardly ever learn to reason; and in infancy and childhood no man can reason: [therefore, as this intelligence of the objects that surround us, and from which we may receive so much benefit or harm, is *equally necessary to children and to men*, to the ignorant and to the learned, God in his wisdom conveys it to us in a way that puts all upon a level. The information of the senses is as perfect, and gives as full conviction to the most ignorant, as to the most learned.]

QUESTIONS FOR EXAMINATION.

Our notion of an external object twofold?
How does the universal belief in the truth of our senses appear?
How far and to whom, is the belief of the existence of external objects to be extended?
Does not extend to infants?
Why impossible to give any reason for, or account of perception?
The answer to the preceding consistent with our notion of the benevolence of God?

CHAPTER VI.

WHAT IT IS TO ACCOUNT FOR A PHENOMENON IN NATURE.

1. *Inquiry the parent of all philosophy.*—An object placed at a proper distance, and in a good light, while the eyes are shut, is not perceived at all; but no sooner do we open our eyes upon it, than we have, as it were by inspiration, a certain knowledge of its existence, of its colour, figure, and distance. This is a fact which every one knows. The vulgar are satisfied with knowing the fact, and give themselves no trouble about the cause of it: but a philosopher is impatient to know how this event is produced, to account for it, or assign its cause.

[This avidity to know the causes of things is the parent of all philosophy true and false. Men of speculation place a great part of their happiness in such knowledge. "Felix qui potuit rerum cognoscere causas," has always been a sentiment of human nature.] But as, in the pursuit of other kinds of happiness, men often mistake the road; so in none have they more frequently done it, than in the philosophical pursuit of the causes of things.

It is a dictate of common sense, that the causes we assign of appearances ought to be real, and not fictions of human imagination. It is likewise self-evident, that such causes ought to be adequate to the effects that are conceived to be produced by them.

II. *Of the laws of nature.*—That those who are less accustomed to inquiries into the causes of natural appearances, may the better understand what it is to show the cause of such appearances, or to account for them; I shall borrow a plain instance of a phenomenon or appearance, of which a full and satisfactory account has been given. The phenomenon is this: that a stone, or any heavy body, falling from a height, continually increases its velocity as it descends; so that if it acquire a certain velocity in one second of time, it will have twice that velocity at the end of two seconds, thrice at the end of three seconds, and so on in proportion to the time. This accelerated velocity in a stone falling must have been observed from the beginning of the world; but the first person, as far as we know, who accounted for it in a proper and philosophical manner, was the famous Galileo; after innumerable false and fictitious accounts had been given of it.

He observed, that bodies once put in motion continue that motion with the same velocity, and in the same direction, until they be stopped or retarded, or have the direction of their motion altered, by some force impressed upon them. This property of bodies is called their *inertia*, or inactivity; for it implies no more than that bodies cannot of themselves change their state from rest to motion, or from motion to rest. He observed also, that gravity acts constantly and equally upon a body, and therefore will give equal degrees of velocity to a body in equal times. From these principles, which are known from experience to be fixed laws of nature, Galileo showed, that heavy bodies must descend with a velocity uniformly accelerated, as by experience they are found to do.

For if the body by its gravitation acquire a certain velocity at the end of one second, it would, though its gravitation should cease that moment, continue to go on with that velocity; but its gravitation continues, and will, in another second, give it an additional velocity, equal to that which it gave in the first; so that the whole velocity at the end of two seconds will be twice as great as at the end of one. In like manner, this velocity being continued through the third second, and having the same addition by gravitation as in any of the preceding, the whole velocity at the end of the third second will be thrice as great as at the end of the first, and so on continually.

We may here observe, that the causes assigned of this phenomenon are two: *First,* That bodies once put in motion retain their velocity and their direction until it is changed by some force impressed upon them. *Secondly,* That the weight or gravitation of a body is always the same. These are laws of nature, confirmed by universal experience, and therefore are not feigned but true causes; then they are precisely adequate to the effect

ascribed to them; they must necessarily produce that very motion in descending bodies which we find to take place; and neither more nor less. The account, therefore, given of this phenomenon is just and philosophical; no other will ever be required or admitted by those who understand this.

[It ought likewise to be observed, that the causes assigned of this phenomenon are things *of which we can assign no cause.* Why bodies once put in motion continue to move; why bodies constantly gravitate towards the earth with the same force, no man has been able to show. These are facts confirmed by universal experience, and they must no doubt have a cause; but their cause is unknown, and we call them laws of nature, because *we know no cause of them but the will of the Supreme Being.*]

III. *The building of hypotheses an endless labour.*—But may we not attempt to find the cause of gravitation, and of other phenomena which we call laws of nature? No doubt we may. We know not the limit which has been set to human knowledge, and our knowledge of the works of God can never be carried too far. But supposing gravitation to be accounted for, by an ethereal elastic medium, for instance, this can only be done, *first,* by proving the existence and the elasticity of this medium; and, *secondly,* by showing that this medium must necessarily produce that gravitation which bodies are known to have. Until this be done, gravitation is not accounted for, nor is its cause known; and when this is done, the elasticity of this medium will be considered as a law of nature, whose cause is unknown. [The chain of natural causes has, not unfitly, been compared to a chain hanging down from heaven:* a link that is discovered supports the links below it, but it must itself be supported; and that which supports it must be supported, until we come to the first link, which is supported by the throne of the Almighty. Every natural cause must have a cause, until we ascend to the first cause, which is uncaused, and operates not by necessity but by will.]

By what has been said in this chapter, those who are but little acquainted with philosophical inquiries may see what is meant by accounting for a phenomenon, or showing its cause, which ought to be well understood, in order to judge of the theories by which philosophers have attempted to account for our perception of external objects by the senses.

QUESTIONS FOR EXAMINATION.

What is understood by "Laws of Nature?"

Wollaston's illustration to prove that the framing of hypotheses is an endless labour?

* Wollaston.

CHAPTER VII.

SENTIMENTS OF PHILOSOPHERS ABOUT THE PERCEPTION OF EXTERNAL OBJECTS; AND,

I. *Of the theory of Father Malebranche.*—How the correspondence is carried on between the thinking principle within us, and the material world without us, has always been found a very difficult problem to those philosophers who think themselves obliged to account for every phenomenon in nature. Many philosophers, ancient and modern, have employed their invention to discover how we are made to perceive external objects by our senses: and there appears to be a very great uniformity in their sentiments in the main, notwithstanding their variations in particular points.

Plato illustrates our manner of perceiving the objects of sense, in this manner: He supposes a dark subterraneous cave,* in which men lie bound in such a manner, that they can direct their eyes only to one part of the cave: far behind, there is a light, some rays of which come over a wall to that part of the cave which is before the eyes of our prisoners. A number of persons, variously employed, pass between them and the light, whose shadows are seen by the prisoners, but not the persons themselves.

In this manner that philosopher conceived that, by our senses, we perceive the shadows of things only, and not things themselves. He seems to have borrowed his notions on this subject from the Pythagoreans, and they very probably from Pythagoras himself. If we make allowance for Plato's allegorical genius, his sentiments on this subject correspond very well with those of his scholar Aristotle, and of the Peripatetics. The shadows of Plato may very well represent the species and phantasms of the Peripatetic school, and the ideas and impressions of modern philosophers.

II. Two thousand years after Plato, Mr. Locke, who studied the operations of the human mind so much, and with so great success, represents our manner of perceiving external objects, by a similitude very much resembling that of the cave. "Methinks," says he, "the understanding is not much unlike a closet wholly shut from light, with only some little opening left to let in external visible resemblances or ideas of things without. Would the pictures coming into such a dark room but stay there, and lie so orderly as to be found upon occasion, it would very much resemble the understanding of a man, in reference to all objects of sight, and the ideas of them."

* Vide chap. iv. sect. ix. p. 70.

III. *Unanimity amongst philosophers, as to the perception of external objects, in one respect.*—Plato's subterranean cave, and Mr. Locke's dark closet, may be applied with ease to all the systems of perception that have been invented: for they all suppose that we perceive not external objects immediately, and that the immediate objects of perception are only certain shadows of the external objects. Those shadows or images, which we immediately perceive, were by the ancients called *species, forms, phantasms.* Since the time of Des Cartes, they have commonly been called *ideas,* and by Mr. Hume *impressions.* [But all philosophers, from Plato to Mr. Hume, agree in this, that we do not perceive external objects immediately, and that the immediate object of perception must be some image present to the mind. So far there appears an unanimity rarely to be found among philosophers on such abstruse points.]

IV. *Meaning of this agreement ambiguous.*—[If it should be asked, Whether, according to the opinion of philosophers, (1) we perceive the images or ideas *only,* and infer the existence and qualities of the external object from what we perceive in the image? Or, whether (2) we really perceive the external object *as well as* its image? The answer to this question is not quite obvious.]

On the one hand, philosophers, if we except Berkeley and Hume, believe the existence of external objects of sense, and call them objects of perception, though not immediate objects. But what they mean by a mediate object of perception, I do not find clearly explained; whether they suit their language to popular opinion, and mean that we perceive external objects in that figurative sense in which we say that we perceive an absent friend when we look on his picture; or whether they mean, that really, and without a figure, we perceive both the external object and its idea in the mind. [If the last be their meaning, it would follow that, in every instance of perception, there is *a double object* perceived:] That I perceive, for instance, one sun in the heavens, and another in my own mind. But I do not find that they affirm this; and, as it contradicts the experience of all mankind, I will not impute it to them.

V. *Probable meaning of the philosophic opinion.*—[It seems, therefore, that their opinion is, that we do not really perceive the external object, but the internal *only;* and that when they speak of perceiving external objects, they mean it only in *a popular or in a figurative sense,* as above explained.] Several reasons lead me to think this to be the opinion of philosophers, beside what is mentioned above. [*First,* If we do really perceive the external object itself, there seems to be *no necessity, no use* for an image of it. *Secondly,* Since the time of Des Cartes, philosophers have very generally thought that the existence of

external objects of sense *requires proof*, and can only be proved from the existence of their ideas. *Thirdly*, The way in which philosophers speak of ideas, seems to imply that they are the *only* objects of perception.]

VI. *Two remarkable theories relative to the perception of external objects.*—Having endeavoured to explain what is *common to philosophers* in accounting for our perception of external objects, we shall give some detail of their differences.

[The ideas by which we perceive external objects, are said by some to be the ideas of the *Deity*; but it has been more generally thought that every man's ideas are proper to *himself*, and are either in his *mind*, or in his *sensorium*, where the mind is immediately present. The *first* is the theory of Malebranche; the *second* we shall call the common theory.*]

With regard to that of Malebranche, it seems to have some affinity with the Platonic notion of ideas, but is not the same. Plato believed that there are three eternal first principles, from which all things have their origin: (1) matter, (2) ideas, and (3) an efficient cause. ☞ Matter is that of which all things are made, which, by all the ancient philosophers, was conceived to be eternal. Ideas are forms without matter of every kind of things which can exist; which forms were also conceived by Plato to be eternal and immutable, and to be the models or patterns by which the efficient cause, that is, the Deity, formed every part of this universe.† These ideas were conceived to be the sole objects of science, and indeed of all true knowledge. While we are imprisoned in the body, we are prone to give attention to the objects of sense only; but these being individual things, and in a constant fluctuation, being indeed shadows rather than realities, cannot be the object of real knowledge. All science is employed, not about individual things, but about things universal and abstract from matter. Truth is eternal and immutable, and therefore must have for its object eternal and immutable ideas; these we are capable of contemplating in some degree even in our present state, but not without a certain purification of mind, and abstraction from the objects of sense. Such, as far as I am able to comprehend, were the sublime notions of Plato and probably of Pythagoras.

The philosophers of the Alexandrian school, commonly called the latter Platonists, seem to have adopted the same system; but with this difference, that they made the eternal ideas not to be a principle distinct from the Deity, but to be in the divine intellect, as the objects of those conceptions which the divine mind must from all eternity have had, not only of every thing which he has made, but of every possible existence, and of all

* It is the Newtonian. Vide chap. iv sect. x. p. 71.

† Vide Essay I. chap. i. sect. xxii. p. 12.

the relations of things: by a proper purification and abstraction from the objects of sense, we may be in some measure united to the Deity, and in the eternal light be enabled to discern the most sublime intellectual truths.

VII. *Malebranche misinterprets St. Augustine's theory.*— These Platonic notions, grafted upon Christianity, probably gave rise to the sect called *Mystics*, which, though in its spirit and principles extremely opposite to the Peripatetic, yet was never extinguished, but subsists to this day.

Many of the Fathers of the Christian church have a tincture of the tenets of the Alexandrian school; among others St. Augustine. But it does not appear, as far as I know, that either Plato, or the latter Platonists, or St. Augustine, or the Mystics, thought that we perceive the *objects of sense* in the divine ideas. They had too mean a notion of our perception of sensible objects to ascribe to it so high an origin. This theory, therefore, of our perceiving the objects of sense in the ideas of the Deity, I take to be the invention of Father Malebranche himself. He indeed brings many passages of St. Augustine to countenance it, and seems very desirous to have that Father of his party. [But in those passages, though the Father speaks in a very high strain of God's being the light of our minds, of our being illuminated immediately by the eternal light, and uses other similar expressions; yet he seems to apply those expressions only to *our illumination in moral and divine things*, and not to the perception of objects by the senses.] Mr. Bayle imagines that some traces of this opinion of Malebranche are to be found in Amelius the Platonist, and even in Democritus; but his authorities seem to be strained.

VIII. *Ideas not necessary to every species of knowledge, according to Malebranche.*—Malebranche, with a very penetrating genius, entered into a more minute examination of the powers of the human mind than any one before him. He had the advantage of the discoveries made by Des Cartes, whom he followed without slavish attachment.

He lays it down as a principle admitted by all philosophers, and which could not be called in question, that we do not perceive external objects immediately, but by means of images or ideas of them present to the mind. "I suppose," says he, "that every one will grant that we perceive not the objects that are without us immediately, and of themselves. We see the sun, the stars, and an infinity of objects without us; and it is not at all likely that the soul sallies out of the body, and, as it were, takes a walk through the heavens to contemplate all those objects: she sees them not, therefore, by themselves; and the immediate object of the mind, when it sees the sun, for example, is not the sun, but something which is intimately united to

the soul; and it is that which I call an idea: so that by the word *idea*, I understand nothing else here but that which is the immediate object, or nearest to the mind, when we perceive any object. It ought to be carefully observed, that, in order to the mind's perceiving any object, it is absolutely necessary that the idea of that object be actually present to it. Of this it is not possible to doubt. [The things which the soul perceives are of two kinds. They are either in the soul, or they are without the soul: those that are in the soul are its own thoughts, that is to say, all its different modifications. *The soul has no need of ideas for perceiving these things.* But with regard to things without the soul, we cannot perceive them but by means of ideas."]

IX. *Of the five modes or ways of perception mentioned by metaphysical writers.*—Having laid this foundation, as a principle which was common to all philosophers, and which admitted of no doubt, he proceeds to enumerate all the possible ways by which the ideas of sensible objects may be presented to the mind: [Either, *first*,* they *come from the bodies* which we perceive; or, *secondly*,† the soul has the power of *producing them in itself*; or, *thirdly*,‡ they are *produced by the Deity*, either in our creation, or occasionally as there is use for them; or, *fourthly*,§ the soul has in itself virtually and eminently, as the schools speak, all the perfections which it perceives in bodies; or, *fifthly*,‖ *the soul is united with a being possessed of all perfection, who has in himself the ideas of all created things*.]

This he takes to be a complete enumeration of all the possible ways in which the ideas of external objects may be presented to our minds: he employs a whole chapter upon each; refuting the four first, and confirming the last by various arguments. The Deity, being always present to our minds in a more intimate manner than any other being, may, upon occasion of the impressions made on our bodies, discover to us, as far as he thinks proper, and according to fixed laws, his own ideas of the object; and thus we see all things in God, or in the divine ideas.

However visionary this system may appear on a superficial view, yet when we consider, that he agreed with the whole tribe of philosophers in conceiving ideas to be the immediate objects of perception, and that he found insuperable difficulties, and even absurdities, in every other hypothesis concerning them, it will not appear so wonderful that a man of very great genius should fall into this; and ☞ probably it pleased so *devout a man* the more, that it sets, in the most striking light, our dependence upon God, and his continual presence with us.

X. *Valuable distinction first made by Malebranche.*—[He distinguished, more accurately than any philosopher had done before, the *objects* which we perceive from the *sensations* in our

* Aristotle. † Hook. ‡ Berkeley. § Norris. ‖ Malebranche.

own minds, which, by the laws of nature, always accompany the perception of the object. As in many things, so particularly in this, he has great merit: for this, I apprehend, is a key that opens the way to a right understanding both of our external senses, and of other powers of the mind.] The vulgar confound sensation with other powers of the mind, and with their objects, because the purposes of life do not make a distinction necessary. [The confounding of these in common language has led philosophers, in one period,* to make those things external which really are sensations in our own minds; and, in another period,† running, as is usual, into the contrary extreme, to make almost every thing to be a sensation or feeling in our minds.]

XI. *He rests all evidence of the existence of matter upon the authority of revelation.*—[It is obvious, that the system of Malebranche leaves *no evidence of the existence of a material world*, from what we perceive by our senses; for the divine ideas, which are the objects immediately perceived, *were the same before the world was created.* Malebranche was too acute not to discern this consequence of his system, and too candid not to acknowledge it: he fairly owns it, and endeavours to make advantage of it, resting the complete evidence we have of the existence of matter upon *the authority of revelation*:] he shows, that the arguments brought by Des Cartes to prove the existence of a material world, though as good as any that reason could furnish, are not perfectly conclusive; [and though he acknowledges, with Des Cartes, that we feel a strong propensity to believe the existence of a material world, yet he thinks this is not sufficient; and that to yield to such propensities without evidence, *is to expose ourselves to perpetual delusion.*] He thinks, therefore, that the only convincing evidence we have of the existence of a material world is, that we are assured by revelation that God created the heavens and the earth, and *that the Word was made flesh*: he is sensible of the ridicule to which so strange an opinion may expose him among those who are guided by prejudice; but, for the sake of truth, he is willing to bear it. But no author, not even Bishop Berkeley, hath shown more clearly, that, either upon his own system, or upon the common principles of philosophers with regard to ideas, we have no evidence left, either from *reason* or from our senses, of the existence of a material world. It is no more than justice to Father Malebranche to acknowledge, that Bishop Berkeley's arguments are to be found in him in their whole force.

XII. *Four arguments of Norris to prove the existence of ideas, &c.*—Mr. Norris, an English divine, espoused the system of Malebranche, in his "Essay towards the Theory of the Ideal or Intellectual World," published in two volumes 8vo, anno 1701.

* Aristotle. † Berkeley.

This author has made a feeble effort to supply a defect which is to be found not in Malebranche only, but in almost all the authors who have treated of ideas; I mean, to prove their existence. He has employed a whole chapter to prove, that material things cannot be an immediate object of perception. His arguments are these:* *first*, They are without the mind, and therefore, there can be no union between the object and the percipient. *Secondly*, They are disproportioned to the mind, and removed from it by the whole diameter of being. *Thirdly*, Because, if material objects were immediate objects of perception, there could be no physical science; things necessary and immutable being the only objects of science. *Fourthly*, If material things were perceived by themselves, they would be a true light to our minds, as being the intelligible form of our understandings, and consequently perfective of them, and indeed superior to them.

XIII. *The adversaries of Malebranche did not aim at the discovery of truth only.*—Malebranche's system was adopted by many devout people in France of both sexes; but it seems to have had no great currency in other countries. Mr. Locke wrote a small tract against it, which is found among his posthumous works: but whether it was written in haste, or after the vigour of his understanding was impaired by age, there is less of strength and solidity in it, that in most of his writings. The most formidable antagonist Malebranche met with was in his own country; Antony Arnauld, doctor of the Sorbonne, and one of the acutest writers the Jansenists have to boast of, though that sect has produced many. (Malebranche was a Jesuit, and the antipathy between the Jesuits and Jansenists left him no room to expect quarter from his learned *antagonist.*)† Those who choose to see this system attacked on the one hand, and defended on the other, with subtilty of argument, and elegance of expression, and on the part of Arnauld with much wit and humour, may find satisfaction by reading Malebranche's "Inquiry after Truth;" Arnauld's book of "True and False Ideas;" Malebranche's "Defence;" and some subsequent replies and defences. In controversies of this kind, the assailant commonly has the advantage, if they are not unequally matched: for it is easier to overturn all the theories of philosophers upon this subject, than to defend any one of them. Mr. Bayle makes a very just remark upon this controversy, that the arguments of Mr. Arnauld against the system of Malebranche were often unanswerable, but they were capable of being retorted against his own system; and his ingenious antagonist knew well how to use this defence.

* Vide Essay II. chap. xiv. sect. iii., where these arguments are refuted.
† The parenthetic passage is omitted in the late editions of these Essays.

QUESTIONS FOR EXAMINATION.

In what opinion do all metaphysical writers agree as to the perception of external objects?

This philosophic opinion admits of a twofold explanation

Two *peculiar* theories relative to the perception of external objects?

Saint Augustine differs from Malebranche?

According to the latter, ideas not always necessary to knowledge?

Five modes of perceiving ideas of sensible objects?

What particular merit due to Malebranche?

Confounding our sensations with the objects that produce them has led philosophers into two errors directly contrary to each other?

Why no evidence left of the existence of the material world in Malebranche's system?

CHAPTER VIII.

OF THE COMMON THEORY OF PERCEPTION, AND OF THE SENTIMENTS OF THE PERIPATETICS, AND OF DES CARTES.

I. THIS theory in general is, that (1) we perceive external objects only by certain images which are in our minds, or (2) in the sensorium to which the mind is immediately present. Philosophers, in different ages, have differed both in the names they have given to those images, and in their notions concerning them. It would be a laborious task to enumerate all their variations, and perhaps would not requite the labour. I shall only give a sketch of the principal differences with regard to their *names* and their *nature*.

II. *Cartesian division of our ideas.*—By Aristotle and the Peripatetics, the images presented to our senses were called *sensible species or forms;* those presented to the memory or imagination were called *phantasms;* and those presented to the intellect were called *intelligible species;* and they thought, that there can be no perception, no imagination, no intellection, without species or phantasms. What the ancient philosophers called species, sensible and intelligible, and phantasms, in later times, and especially since the time of Des Cartes, came to be called by the common name of *ideas.* [The Cartesians divided our ideas into three classes, those of *sensation*, of *imagination*, and of *pure intellection*. Of the objects of sensation and imagination, they thought the images are in the *brain*, but of objects that are *incorporeal*, the images are in the understanding, or pure *intellect.*]

Mr. Locke, taking the word *idea* in the same sense as Des Cartes had done before him, to signify whatever is meant by phantasm, notion or species, divides ideas into those of *sensation*, and those of *reflection;* meaning by the first, the ideas of all corporeal objects, whether perceived, remembered, or imagined;

by the second, the ideas of the powers and operations of our minds. What Mr. Locke calls ideas, Mr. Hume divides into two distinct kinds, *impressions* and *ideas*. The difference betwixt these, he says, consists in the degrees of force and liveliness with which they strike upon the mind. Under *impressions* he comprehends all our sensations, passions and emotions, as ☞ *they make their first appearance in the soul*. By *ideas* he means the faint images of these in thinking and reasoning.

Dr. Hartley gives the same meaning to ideas as Mr. Hume does, and what Mr. Hume calls impressions he calls sensations; conceiving our sensations to be occasioned by vibrations of the infinitesimal particles of the brain, and ideas by miniature vibrations, or vibratiuncles. Such differences we find among philosophers, with regard to the *name* of those internal images of objects of sense, which they hold to be the immediate objects of perception.

III. *Aristotelian notion regarding the soul.*—We shall next give a short detail of the sentiments of the Peripatetics and Cartesians, of Locke, Berkeley, and Hume, concerning them.

[Aristotle seems to have thought that the soul consists of two parts, or, rather, that we have two souls, the animal and the rational; or, as he calls them, the soul and the intellect. To the *first*, belong the *senses*, *memory*, and *imagination*; to the *last*, *judgment*, *opinion*, *belief*, and *reasoning*. The first we have in common with brute animals; the last is peculiar to man. The animal soul he held to be a certain form of the body, which is inseparable from it, and perishes at death. To this soul the senses belong: and he defines a sense to be that which is capable of receiving the sensible forms, or species of objects, without any of the matter of them; as wax receives the form of the seal without any of the matter of it. The forms of sound, of colour, of taste, and of other sensible qualities, are in like manner received by the senses.]

It seems to be a necessary consequence of Aristotle's doctrine, that bodies are constantly sending forth, in all directions, as many different kinds of forms without matter as they have different sensible qualities; for the forms of colour must enter by the eye, the forms of sound by the ear, and so of the other senses. This accordingly was maintained by the followers of Aristotle, though not, as far as I know, expressly mentioned by himself. They disputed concerning the nature of those forms, or species, whether they were real beings or non-entities; and some held them to be of an intermediate nature between the two. The whole doctrine of the Peripatetics and schoolmen concerning forms, substantial and accidental, and concerning the transmission of sensible species from objects of sense to the mind, if it be at all intelligible, is so far above my comprehension, that I

should perhaps do it injustice, by entering into it more minutely. Malebranche, in his "Recherche de la Verité," has employed a chapter to show, that material objects do not send forth sensible species of their several sensible qualities.

IV. *The boldness of Des Cartes, in dissenting from the Aristotelian theory, deserving of commendation.*—The great revolution which Des Cartes produced in philosophy, was the effect of a superiority of genius, aided by the circumstances of the times. Men had, for more than a thousand years, looked up to Aristotle as an oracle in philosophy. His authority was the test of truth.* The small remains of the Platonic system were confined to a few mystics, whose principles and manner of life drew little attention. The feeble attempts of Ramus, and of some others, to make improvements in the system, had little effect. [The Peripatetic doctrines were so interwoven with the whole system of scholastic *theology*, that to dissent from Aristotle was *to alarm the church.*] The most useful and intelligible parts, even of Aristotle's writings, were neglected, and philosophy was become an art of speaking learnedly, and disputing subtilely, without producing any invention of use in human life. It was fruitful of words, but barren of works, and admirably contrived for drawing a veil over human ignorance, and putting a stop to the progress of knowledge, by filling men with a conceit that they knew every thing. It was very fruitful also in controversies; but for the most part they were controversies about words, or about things of no moment, or things above the reach of the human faculties: and the issue of them was what might be expected, that the contending parties fought, without gaining or losing an inch of ground, till they were weary of the dispute, or their attention was called off to some other subject.

V. *Analogous reformation in philosophy and religion.*—Such was the philosophy of the schools of Europe, during many ages of darkness and barbarism that succeeded the decline of the Roman empire; so that there was great need of *a reformation in philosophy as well as in religion.* The light began to dawn at last; a spirit of inquiry sprang up, and men got the courage to doubt of the dogmas of Aristotle, as well as of the decrees of popes. [The most important step in the reformation of religion was to destroy the claim of infallibility, which hindered men from using their judgment in matters of religion: and the most important step in the reformation of philosophy was to destroy the authority, of which Aristotle had so long had peaceable possession. The last had been attempted by Lord Bacon and others, with no less zeal than the first by Luther and Calvin.]

VI. *Caution observed by Des Cartes against the prejudices of education.*—Des Cartes knew well the defects of the prevailing

* Bacon's Novum Organum, sect. 89.

system, which had begun to lose its authority. His genius enabled him, and his spirit prompted him, to attempt a new one. He had applied much to the mathematical sciences, and had made considerable improvement in them. He wished to introduce that perspicuity and evidence into other branches of philosophy which he found in them.

[Being sensible how apt we are to be led astray by prejudices of education, he thought the only way to avoid error, was, *to resolve to doubt of every thing*, and hold every thing to be uncertain; even those things which he had been taught to hold as most certain, until he had such clear and cogent evidence as compelled his assent.]

VII. *Fundamental principle of the Cartesian philosophy.*—[In this state of universal doubt, that which first appeared to him to be clear and certain, was his own existence. Of this he was certain, because he was conscious that he thought, that he reasoned, and that he doubted. He used this argument, therefore, to prove his own existence, "Cogito, ergo sum." This he conceived to be the first of all truths, the *foundation-stone* upon which the whole fabric of human knowledge is built, and on which it must rest.] And as Archimedes thought, that if he had one fixed point to rest his engines upon, he could move the earth; so Des Cartes, charmed with the discovery of one certain principle, by which he emerged from the state of universal doubt, believed that this principle alone would be a sufficient foundation on which he might build the whole system of science. He seems, therefore, to have taken no great trouble to examine whether there might not be other first principles, which, on account of their own light and evidence, ought to be admitted by every man of sound judgment. The love of simplicity, so natural to the mind of man, led him to apply the whole force of his mind to raise the fabric of knowledge upon this one principle, rather than seek a broader foundation.

VIII. *Des Cartes induced, by two arguments, to doubt the evidence of the senses.*—Accordingly, he does not admit the evidence of sense to be a first principle, as he does that of consciousness. The arguments of the ancient sceptics here occurred to him; that our senses often deceive us, and therefore ought never to be trusted on their own authority; [that, (1) in sleep, we often seem to see and hear things which we are convinced to have had no existence. But that which chiefly led Des Cartes to think that he ought not to trust to his senses without proof of their veracity, was, that (2) he took it for granted, as all philosophers had done before him, that he did not perceive external objects themselves, but certain images of them in his own mind, called *ideas*. He was certain, by consciousness, that he had the ideas of sun and moon, earth and sea; but how could he be

assured that there really existed external objects like to these ideas ?"

IX. *Egoists.*—[Hitherto he was uncertain of every thing but of his own existence, and the existence of the operations and ideas of his own mind. Some of his disciples, it is said, remained at this stage of his system, and got the name of *Egoists.*] They could not find evidence in the subsequent stages of his progress. [But Des Cartes resolved not to stop here; he endeavoured to prove, by a new argument, drawn from his idea of a Deity, the existence of an infinitely perfect Being, who made him and all his faculties. From the perfection of this Being, he inferred that he could be no deceiver; and therefore concluded, *that his senses, and the other faculties he found in himself, are not fallacious,* but may be trusted, when a proper use is made of them.]

The system of Des Cartes is, with great perspicuity and acuteness, explained by himself in his writings, which ought to be consulted by those who would understand it.

The merit of Des Cartes cannot be easily conceived by those who have not some notion of the Peripatetic system in which he was educated. To throw off the prejudices of education, and to create a system of nature totally different from that which had subdued the understanding of mankind, and kept it in subjection for so many centuries, required an uncommon force of mind.

The world which Des Cartes exhibits to our view, is not only in its structure very different from that of the Peripatetics, but is, as we may say, composed of different materials.

In the old system, everything was, by a kind of metaphysical sublimation, resolved into principles so mysterious, that it may be a question, whether they were words without meaning, or were notions too refined for human understanding.

X. *The "prima materia" of the Peripatetics.*—All that we observe in nature, is, according to Aristotle, a *constant succession of the operations of generation and corruption.* The principles of generation are *matter* and *form.* The principle of corruption is *privation.* All natural things are produced or generated by the union of matter and form; matter being, as it were, the mother, and form the father. [As to matter, or *the first matter,* as it is called, it is neither *substance nor accident;* it has no quality or property; it is nothing actually, but everything potentially. It has so strong an appetite for form, that it is no sooner divested of one form, than it is clothed with another, and is equally susceptible of all forms successively. It has no nature, but only the capacity of having any one.]

XI. *The twofold form of matter, and their distinctive characteristics.*—This is the account which the Peripatetics give of

the first matter. The other principle of generation is *form, act, perfection;* for these three words signify the same thing. But we must not conceive form to consist in the figure, size, arrangement, or motion, of the parts of matter. These, indeed, are *accidental* forms, by which *things artificial are formed;* but every production of nature has a substantial form, which, joined to matter, makes it to be what it is. [The *substantial form* is a kind of informing soul, which gives the thing its specific nature, and all its qualities, powers, and activity.] Thus the substantial form of heavy bodies is that which makes them descend; of light bodies, that which makes them ascend. The substantial form of gold is that which gives it its ductility, its fusibility, its weight, its colour, and all its qualities; and the same is to be understood of every natural production. [A change in the *accidental form* of any body, is *alteration* only; but a change in the *substantial form* is, *generation* and *corruption:* it is corruption with respect to the substantial form of which the body is deprived; it is generation with respect to the substantial form that succeeds.] Thus, when a horse dies and turns to dust, the philosophical account of the phenomenon is this: a certain portion of the "materia prima," which was joined to the substantial form of a horse, is deprived of it by privation, and in the same instant is invested with the substantial form of earth. As every substance must have a substantial form, there are some of those forms inanimate, some vegetative, some animal, and some rational. The three former kinds can only subsist in matter, but the last, according to the schoolmen, is immediately created by God, and infused into the body, making one substance with it, while they are united; yet capable of being disjoined from the body, and of subsisting by itself.

XII. *Difference between Platonists and Peripatetics with respect to forms.*—Such are the principles of natural things in the Peripatetic system. It retains so much of the ancient Pythagorean doctrine, that we cannot ascribe the invention of it solely to Aristotle, although he no doubt made considerable alterations in it. The first matter was probably the same in both systems, and was in both held to be eternal. They differed more about form. [The Pythagoreans and Platonists held forms, or ideas, as they called them, to be eternal, immutable, and self-existent. Aristotle maintained that they were not eternal nor self-existent. On the other hand, he did not allow them to be produced, but educed from matter; yet he held them not to be actually in the matter from which they are educed, but potentially only.]* But these two systems differed less from one another than that of Des Cartes did from both.

In the world of Des Cartes we meet with two kinds of beings

* Vide Essay I. chap. i. sect. xxiii. p. 12.

only, to wit, body and mind; the first, the object of our senses, the other, of consciousness; both of them things of which we have a distinct apprehension, if the human mind be capable of distinct apprehension at all. To the first, no qualities are ascribed but extension, figure, and motion; to the last, nothing but thought, and its various modifications, of which we are conscious. He could observe no common attribute, no resembling feature in the attributes of body and mind, and therefore concluded them to be distinct substances, and totally of a different nature; and that body, from its very nature, is inanimate and inert, incapable of any kind of thought or sensation, or of producing any change or alteration in itself.

XIII. *The Cartesian theory contributed to the advancement of pneumatology.*—[Des Cartes must be allowed the honour of being the first *who drew a distinct line between the material and intellectual world*, which, in all the old systems, were so blended together, that it was impossible to say where the one ends and the other begins. How much this distinction hath contributed to the improvements of modern times, in the philosophy both of body and of mind, is not easy to say.]

One obvious consequence of this distinction was, that *accurate reflection on the operations of our own mind, is the only way to make any progress in the knowledge of it.* Malebranche, Locke, Berkeley, and Hume, were taught this lesson by Des Cartes; and to it we owe their most valuable discoveries in this branch of philosophy. *The analogical way of reasoning* concerning the powers of the mind from the properties of body, which is the source of almost all the errors on this subject, and which is so natural to the bulk of mankind, was as contrary to the principles of Des Cartes as it was agreeable to the principles of the old philosophy. [We may, therefore, truly say, that, in that part of philosophy which relates to the mind, Des Cartes laid the foundation, and put us into that track, which all wise men now acknowledge to be the only one in which we can expect success.]

XIV. *Improvement in the study of physics checked by the Peripatetic philosophy.*—With regard to *physics*, or the philosophy of body, if Des Cartes had not the merit of leading men into the right track, we must allow him that of bringing them out of a wrong one. [The Peripatetics, by assigning to every species of body a particular substantial form, which produces, *in an unknown manner*, all the effects we observe in it, put a stop to all improvement in this branch of philosophy.] Gravity and levity, fluidity and hardness, heat and cold, were qualities arising from the substantial form of the bodies to which they belonged. Generation and corruption, substantial forms, and occult qualities, were always at hand, to resolve every pheno-

menon. This philosophy, therefore, instead of accounting for any of the phenomena of nature, contrived only to give learned names to their unknown causes, and fed men with the husks of barbarous terms, instead of the fruit of real knowledge.

XV. *Fall of the Aristotelian philosophy, and commencement of a more modest and rational system.*—By the spreading of the Cartesian system, "materia prima," substantial forms, and occult qualities, with all the jargon of the Aristotelian physics, fell into utter disgrace, and were never mentioned by the followers of the new system but as a subject of ridicule. Men became sensible that their understanding had been hoodwinked by those hard terms. They were now accustomed to explain the phenomena of nature, by the figure, size, and motion of the particles of matter, things perfectly level to human understanding, and could relish nothing in philosophy that was dark and unintelligible. Aristotle, after a reign of more than a thousand years, was now exposed as an object of derision even to the vulgar, arrayed in the mock majesty of his substantial forms and occult qualities. The ladies became fond of a philosophy which was easily learned, and required no words too harsh for their delicate organs. Queens and princesses, the most distinguished personages of the age, courted the conversation of Des Cartes, and became adepts in his philosophy. Witness Christina, Queen of Sweden, and Elizabeth, daughter of Frederick, King of Bohemia, and sister to Sophia, the mother of our royal family. The last, though very young when Des Cartes wrote his "Principia," he declares to be the only person he knew, who perfectly understood not only all his philosophical writings, but the most abstruse of his mathematical works.

XVI. *In overturning the errors of the Peripatetic philosophy, the Cartesians were led into the opposite extreme.*—That men should rush with violence from one extreme, without going more or less into the contrary extreme, is not to be expected from the weakness of human nature. [Des Cartes and his followers were not exempted from this weakness; they thought that extension, figure, and motion, were sufficient to resolve all the phenomena of the material system. To admit other qualities, whose cause is unknown, was to return to Egypt, from which they had been so happily delivered.]

[When Sir Isaac Newton's doctrine of gravitation was published, the great objection to it, which hindered its general reception in Europe for half a century, was, that gravitation seemed to be an *occult quality*, as it could not be accounted for by extension, figure, and motion, the known attributes of body.] They who defended him, found it difficult to answer this objection, to the satisfaction of those who had been initiated in the principles of the Cartesian system. But by degrees men came

to be sensible that, in revolting from Aristotle, *the Cartesians had gone into the opposite extreme;* experience convinced them that there are qualities in the material world, *whose existence is certain, though their cause be occult.* To acknowledge this, is only a candid confession of human ignorance, than which there is nothing more becoming a philosopher.

XVII. *The example of Des Cartes a caution against the admission of hypotheses.*—As all that we can know of the mind must be derived from a careful observation of its operations in ourselves; so all that we can know of the material system must be derived from what can be discovered by our senses. Des Cartes was not ignorant of this; nor was his system so unfriendly to observation and experiment as the old system was. He made many experiments, and called earnestly upon all lovers of truth to aid him in this way. [But believing that all the phenomena of the material world are the result of extension, figure, and motion, and that the Deity always combines these, so as to produce the phenomena in the simplest manner possible, he thought that, from a few experiments, he might be able to discover the simplest way, in which the obvious phenomena of nature can be produced by matter and motion only; and that this must be the way in which they are actually produced.] His conjectures were ingenious, upon the principles he had adopted: but they are found to be so far from the truth, that they ought for ever to discourage philosophers from trusting to conjecture in the operations of nature.

The vortices or whirlpools of subtile matter, by which Des Cartes endeavoured to account for the phenomena of the material world, are now found to be fictions, no less than the sensible species of Aristotle.

It was reserved for Sir Isaac Newton to point out clearly the road to the knowledge of nature's works. Taught by Lord Bacon to despise hypotheses as the fictions of human fancy, he laid it down as a rule of philosophising, that no causes of natural things ought to be assigned but such as can be proved to have a real existence. He saw that all the length men can go in accounting for phenomena, is to discover the laws of nature, according to which they are produced; and therefore, that the true method of philosophising is this: From real facts ascertained by observation and experiment, to collect by just induction the laws of nature, and to apply the laws so discovered, to account for the phenomena of nature.

Thus the natural philosopher has the rules of his art fixed with no less precision than the mathematician, and may be no less certain when he keeps within them, and when he deviates from them. And though the evidence of a law of nature from induction is not demonstrative, it is the only kind of evidence

on which all the most important affairs of human life must rest.

Pursuing this road without deviation, Newton discovered the laws of our planetary system, and of the rays of light; and gave the first and the noblest examples of that chaste induction which Lord Bacon could only delineate in theory.

How strange is it, that the human mind should have wandered for so many ages, without falling into this track! How much more strange, that after it has been clearly discovered, and a happy progress made in it, many choose rather to wander in the fairy regions of hypothesis!

XVIII. *Des Cartes' explanation of perception.*—To return to Des Cartes' notions of the manner of our perceiving external objects, from which a concern to do justice to the merits of that great reformer in philosophy has led me to digress, he took it for granted, as the old philosophers had done, that what we immediately perceive must be either in the mind itself, or in the brain, to which the mind is immediately present. The impressions made upon our organs, nerves, and brain, could be nothing, according to his philosophy, but various modifications of extension, figure, and motion. [There could be nothing in the brain like sound or colour, taste or smell, heat or cold; these are sensations in the mind, which by the laws of the union of soul and body, are raised *on occasion of certain traces in the brain;* and although he gives the name of ideas to those traces in the brain, he does not think it necessary *that they should be perfectly like to the things which they represent,* any more than that words or signs should resemble the things they signify. But, says he, that we may follow the received opinion as far as is possible, we may allow a slight resemblance.] Thus we know that a print in a book may represent houses, temples, and groves; and so far is it from being necessary that the print should be perfectly like the thing it represents, that its perfection often requires the contrary. For a circle must often be represented by an ellipse, a square by a rhombus, and so of other things.

[The perceptions of sense, he thought, are to be referred solely to the union of soul and body. They commonly exhibit to us only what may hurt or profit our bodies; and rarely, and by accident only, exhibit things as they are in themselves. It is by observing this, that we must learn to throw off the prejudices of sense, and to attend with our intellect to the ideas which are by nature implanted in it. By this means we shall understand, that the nature of matter does not consist in those things that affect our senses, such as colour, or smell, or taste; but only in this, that it is something extended in length, breadth, and depth.]

The writings of Des Cartes have in general a remarkable degree of perspicuity; and he undoubtedly intended that, in this

particular, his philosophy should be a perfect contrast to that of Aristotle; yet in what he has said in different parts of his writings, of our perception of external objects, there seems to be some obscurity, and even inconsistency; whether owing to his having had different opinions on the subject at different times, or to the difficulty he found in it, I will not pretend to say.

XIX. *Inconsistencies of the Cartesian philosophy.*—[There are two points in particular, wherein I cannot reconcile him to himself: The *first*, regarding the place of the ideas or images of external objects, which are the immediate objects of perception; the *second*, with regard to the veracity of our external senses.]

XX. *An exact resemblance of the idea to the object that produces it, not necessary.*—[As to the *first*, he sometimes places the ideas of material objects in the brain, not only when they are perceived, but when they are remembered or imagined; and this has always been held to be the Cartesian doctrine; yet he sometimes says, that we are not to conceive the images or traces in the brain *to be perceived*, as if there were eyes in the brain; these traces are only *occasions* on which, by the laws of the union of soul and body, ideas are excited in the mind; and therefore it is not necessary that there should be an exact resemblance between the traces and the things represented by them, any more than that *words or signs should be exactly like the things signified by them.*]

[These two opinions, I think, cannot be reconciled. For, if the images or traces in the brain are perceived, they must be the objects of perception, and not the occasions of it only. On the other hand, if they are only the occasions of our perceiving, they are not perceived at all.] Des Cartes seems to have hesitated between the two opinions, or to have passed from the one to the other. Mr. Locke seems, in like manner, to have wavered between the two; sometimes representing the ideas of material things as being in the brain, but more frequently as in the mind itself. Neither Des Cartes nor Mr. Locke could, consistently with themselves, attribute any other qualities to images in the brain, but extension, figure, and motion; for as to those qualities which Mr. Locke distinguished by the name of secondary qualities, both philosophers believed them not to belong to body at all, and therefore could not ascribe them to images in the brain.

Sir Isaac Newton and Dr. Samuel Clarke, uniformly speak of the species or images of material things as being in that part of the brain called the *sensorium*, and perceived by the mind there present; but the former speaks of this point only incidentally, and with his usual modesty, in the form of a query. [Malebranche is perfectly clear and unambiguous in this matter. According to his system, the images or traces in the brain are

not perceived at all; they are *only occasions* upon which, by the laws of nature, certain sensations are felt by us, and certain of the divine ideas discovered to our minds.]

The *second* point on which Des Cartes seems to waver, is with regard to the credit that is due to the testimony of our senses.

Sometimes, from the perfection of the Deity, and his being no deceiver, he infers, that our senses and our other faculties cannot be fallacious: and since we seem clearly to perceive, that the idea of matter comes to us from things external, which it perfectly resembles, therefore, we must conclude, that there really exists something extended in length, breadth, and depth, having all the properties which we clearly perceive to belong to an extended thing.

At other times, we find Des Cartes and his followers making frequent complaints, as all the ancient philosophers did, of the fallacies of sense. He warns us to throw off its prejudices, and to attend only, with our intellect, to the ideas implanted there. By this means we may perceive, that the nature of matter does not consist in hardness, colour, weight, or any of those things that affect our senses, but in this only, that it is something extended in length, breadth and depth. The senses, he says, are only relative to our present state; they exhibit things only, as they tend to profit or to hurt us, and rarely, and by accident only, as they are in themselves.

XXI. *In aiming at perspicuity Des Cartes fell into two remarkable errors.*—[It was probably owing to an aversion to admit any thing into philosophy, of which we have not a clear and distinct conception, that Des Cartes was led to deny, *that there is any substance of matter, distinct from those qualities of it which we perceive.*] We say, that matter is something extended, figured, moveable. Extension, figure, mobility, therefore, are not matter, but qualities, belonging to this something, which we call *matter*. Des Cartes could not relish this obscure *something*, which is supposed to be the subject or *substratum* of those qualities; and therefore maintained, (1) *that extension is the very essence of matter*. But, as we must ascribe extension to space as well as to matter, he found himself under a necessity of holding, that space and matter are the same thing, and differ only in our way of conceiving them; so that, wherever there is space there is matter, and no void left in the universe. The necessary consequence of this is, that the material world has no bounds nor limits. He did not, however, choose to call it infinite, but indefinite.

It was probably owing to the same cause that Des Cartes made (2) *the essence of the soul to consist in thought*: he would not allow it to be an unknown something that has the power of thinking; it cannot therefore be without thought: [and as he

conceived that there can be no thought without ideas, the soul must have had ideas in its first formation, which, of consequence, are *innate*.]

The sentiments of those who come after Des Cartes, with regard to the nature of body and mind, have been various. Many have maintained, that body is only a collection of qualities to which we give one name; and that the notion of a subject of inhesion, to which those qualities belong, is only a fiction of the mind.* Some have even maintained, that the soul is only a succession of related ideas, without any subject of inhesion.† It appears, by what has been said, how far these notions are allied to the Cartesian system.

XXII. *Spirit of the Cartesian philosophy.*—The triumph of the Cartesian system over that of Aristotle, is one of the most remarkable revolutions in the history of philosophy, and has led me to dwell longer upon it than the present subject perhaps required. The authority of Aristotle was now no more. That reverence for hard words and dark notions, by which men's understanding had been strangled in early years, was turned into contempt, and *every thing suspected which was not clearly and distinctly understood.* [This is the spirit of the Cartesian philosophy, and is a more important acquisition to mankind than any of its particular tenets; and for exerting this spirit so zealously, and spreading it so successfully, Des Cartes deserves immortal honour.]

XXIII. *The Peripatetic system not wholly rejected by Des Cartes.*—It is to be observed, however, that Des Cartes rejected a part only of the ancient theory, concerning the perception of external objects by the senses, and that he adopted the other part. [That theory may be divided into two parts: the *first*, That images, species, or forms of external objects, *come from the object*, and enter by the avenues of the senses to the mind; the *second* part is, That the external object itself is not perceived, but only the species or image of it in the mind.] The first part Des Cartes and his followers rejected, and refuted by solid arguments; but the second part, neither he, nor his followers, have thought of calling in question; being persuaded, that it is only a representative image, in the mind, of the external object that we perceive, and not the object itself. ☞ And this image, which the Peripatetics called a species, he calls an idea, changing the name only, while he admits the thing.

It seems strange, that the great pains which this philosopher took to throw off the prejudices of education, to dismiss all his former opinions, and to assent to nothing, till he found evidence that compelled his assent, should not have led him to doubt of this opinion of the ancient philosophy. It is evidently a philo-

* Berkeley. † Hume.

sophical opinion; for the vulgar undoubtedly believe that it is the external object which we immediately perceive, and not a representative image of it only. It is for this reason, that they look upon it as a perfect lunacy to call in question the existence of external objects.

XXIV. *Agreement between the vulgar and philosophic opinions as to the idea and object.*—[It seems to be admitted as a first principle by the learned and the unlearned, that what is really perceived must exist, and that to perceive what does not exist is impossible. So far the unlearned man and the philosopher agree.] The unlearned man says, I perceive the external object, and I perceive it to exist. Nothing can be more absurd than to doubt of it. The Peripatetic says, what I perceive is the very identical form of the object, which came immediately from the object, and makes an impression upon my mind, as a seal does upon wax; and therefore, I can have no doubt of the existence of an object whose form I perceive. But what says the Cartesian? I perceive not, says he, the external object itself. So far he agrees with the Peripatetic, and differs from the unlearned man. But I perceive an image, or form, or idea, in my own mind, or in my brain. I am certain of the existence of the idea, because I immediately perceive it. But how this idea is formed, or what it represents, is not self-evident; and therefore I must find arguments, by which, from the existence of the idea which I perceive, I can infer the existence of an external object which it represents.

XXV. *Different degrees of conviction as to the existence of an external world, entertained by the Cartesian, the Peripatetic, and the unlearned man.*—As I take this to be a just view of the principles of the unlearned man, of the Peripatetic, and of the Cartesian, so I think they all reason consequentially from their several principles; [that the Cartesian has strong grounds to doubt of the existence of external objects; the Peripatetic very little ground of doubt; and the unlearned man none at all;] and that the difference of their situation arises from this, that the unlearned man has no hypothesis; the Peripatetic leans upon an hypothesis; and the Cartesian upon one half of that hypothesis.

Des Cartes, according to the spirit of his own philosophy, ought to have doubted of both parts of the Peripatetic hypothesis, or to have given his reasons why he adopted one part, as well as why he rejected the other part; especially, since the unlearned, who have the faculty of perceiving objects by their senses in no less perfection than philosophers, and should therefore know, as well as they, what it is they perceive, have been unanimous in this, that the objects they perceive are not ideas in their own minds, but things external. It might have been expected, that a philosopher who was so cautious as not to take his

own existence for granted without proof, would not have taken it for granted, without proof, that every thing he perceived was only ideas in his own mind.

But if Des Cartes made a rash step in this, as I apprehend he did, he ought not to bear the blame alone. His successors have still continued in the same track, and, after his example, have adopted one part of the ancient theory, to wit, that the objects we immediately perceive are ideas only. All their systems are built on this foundation.

QUESTIONS FOR EXAMINATION.

What is the Cartesian division of our ideas?
Aristotle's opinion as to the soul?
Des Cartes deserves the gratitude of mankind for attacking the Peripatetic philosophy?
Analogous reformation in religion?
Des Cartes' mode of counteracting the prejudices of education?
His fundamental principles?
Why did he doubt the evidence of the senses?
How did the *Egoists* originate?
Arguments of Des Cartes for the existence of a Deity and the evidence of our senses?
What is matter, or the first matter, according to the Peripatetics?
Form twofold, and how distinguished?
Platonists and Peripatetics differ with regard to *form*?
In what respect has Des Cartes benefited the science of pneumatology?
To what is its progress in later periods chiefly attributable?
The Peripatetic theories impeded the progress of physical science?
Perception, according to Des Cartes?
The chief use of our senses?
Whence is it that we are subject to prejudices?
In two instances Des Cartes contradicts himself?
Similitude between the idea and object not necessary?
His scepticism led Des Cartes into two remarkable errors?
Why does he defend the doctrine of *innate* ideas?
Spirit of the Cartesian philosophy?
That philosophy does not wholly reject the Peripatetic notions?
He departs from scepticism in one opinion?
How far do the vulgar and the philosopher agree?
The Cartesian, the Peripatetic, and the vulgar have different degrees of conviction as to the existence of a material world?

CHAPTER IX.

OF THE SENTIMENTS OF MR. LOCKE.

1. The reputation which Locke's "Essay on Human Understanding" had at home from the beginning, and which it has gradually acquired abroad, is a sufficient testimony of its merit. There is perhaps no book of the metaphysical kind that has been so generally read by those who understand the language, or that is more

adapted to teach men to think with precision, and to inspire them with that candour and love of truth, which is the genuine spirit of philosophy. He gave, I believe, the first example in the English language of writing on such abstract subjects, with a remarkable degree of simplicity and perspicuity; and in this he has been happily imitated by others that came after him. No author hath more successfully pointed out the danger of ambiguous words, and the importance of having distinct and determinate notions in judging and reasoning. His observations on the various powers of the human understanding, on the use and abuse of words, and on the extent and limits of human knowledge, are drawn from attentive reflection on the operations of his own mind, the true source of all real knowledge on these subjects; and show an uncommon degree of penetration and judgment: but he needs no panegyric of mine; and I mention these things, only that, when I have occasion to differ from him, I may not be thought insensible of the merit of an author whom I highly respect, and to whom I owe my first lights in those studies, as well as my attachment to them.

He sets out in his Essay with a full conviction, common to him with other philosophers, that ideas in the mind are the objects of all our thoughts in every operation of the understanding. This leads him to use the word *idea* so very frequently, beyond what was usual in the English language, that he thought it necessary in his introduction to make this apology: "It being that term," says he, "which, I think, serves best to stand for whatsoever is the object of the understanding, when a man thinks; I have used it to express whatever is meant by phantasm, notion, species, or whatever it is which the mind can be employed about in thinking; and I could not avoid frequently using it. I presume it will be granted me, that there are such ideas in men's minds; every man is conscious of them in himself; and men's words and actions will satisfy him that they are in others."

Speaking of the reality of our knowledge, he says, "It is evident the mind knows not things immediately, but only by the intervention of the ideas it has of them: our knowledge therefore is real, only so far as there is a conformity between our ideas and the reality of things. But what shall be here the criterion? How shall the mind, when it perceives nothing but its own ideas, know that they agree with things themselves? This, though it seems not to want difficulty, yet I think there be two sorts of ideas that we may be assured agree with things."

II. *Locke conscious of the weakness of his arguments for the existence of a material world.*—We see that Mr. Locke was aware no less than Des Cartes, that the doctrine of ideas made it necessary, and at the same time difficult, to prove the existence of a material world without us; because the mind, according to

that doctrine, perceives nothing but a world of ideas in itself. Not only Des Cartes, but Malebranche, Arnauld, and Norris, had perceived this difficulty, and attempted to remove it with little success. Mr. Locke attempts the same thing; but his arguments are feeble. [He even seems to be conscious of this: for he concludes his reasoning with this observation, "that we have evidence sufficient to direct us in attaining the good and avoiding the evil, caused by external objects, and that this is the important concern we have in being made acquainted with them." This indeed is saying no more than will be granted by those who deny the existence of a material world.]

III. *Remarkable differences between the French and English schools of metaphysics.*—As there is no material difference between Locke and Des Cartes with regard to the perception of objects by the senses, there is the less occasion, in this place, to take notice of all their differences in other points. [They differed about the origin of our ideas. (1) Des Cartes thought *some* of them were innate:* the other maintained, that there are no innate ideas, and that they are all derived from two sources, to wit, *sensation* and *reflection;* meaning by sensation, the operations of our external senses; and by reflection, that attention which we are capable of giving to the operations of our own minds.]

[(2) They differed with regard to the essence both of matter and of mind: the British philosopher holding, that the real essence of both is beyond the reach of human knowledge; the other conceiving, that the very essence of mind consists in thought; and that of matter in extension; by which he made matter and space not to differ in reality, and no part of space to be void of matter.]

IV. *Nominal essence first distinguished.*—Mr. Locke explained, more distinctly than had been done before, the operations of the mind in classing the various objects of thought, and reducing them to genera and species. [He was the first, I think, who distinguished in substances what he calls the nominal essence, which is only the notion we form of a genus or species, and which we express by a definition, from the real essence or internal constitution of the thing, which makes it to be what it is.] Without this distinction, the subtile disputes which tortured the schoolmen for so many ages, in the controversy between the nominalists and realists, could never be brought to an issue. He shows distinctly how we form abstract and general notions, and the use and necessity of them in reasoning. And as (according to the received principles of philosophers) every notion of our mind must have for its object an idea in the mind itself; he thinks that we form abstract ideas by leaving out of the idea of an individual, every thing wherein it differs from other individuals

* Vide Essay II. chap. viii. sect. xxi. p. 102.

of the same species or genus; and that this power of forming abstract ideas, is that which chiefly distinguishes us from brute animals, in whom he could see no evidence of any abstract ideas.

V. *To what degree the mind participates in the formation of ideas, was a question much agitated after the age of Des Cartes.*—[Since the time of Des Cartes, philosophers have differed much with regard to the share *they ascribe to the mind itself*, in the fabrication of those representative beings called *ideas*, and the manner in which this work is carried on.]

Of the authors I have met with, Dr. Robert Hook is the most explicit. He was one of the most ingenious and active members of the Royal Society of London at its first institution; and frequently read lectures to the Society, which were published among his posthumous works. In his lectures upon Light, sect. 7, he makes ideas to be material substances; and thinks that the brain is furnished with a proper kind of matter for fabricating the ideas of each sense. The ideas of sight, he thinks, are formed of a kind of matter resembling the Bononian stone, or some kind of phosphorus; that the ideas of sound are formed of some matter resembling the chords or glasses which take a sound from the vibrations of the air; and so of the rest.

The soul, he thinks, may fabricate some hundreds of those ideas in a day; and that as they are formed, they are pushed farther off from the centre of the brain where the soul resides. By this means they make a continued chain of ideas, coiled up in the brain, the first end of which is farthest removed from the centre or seat of the soul; and the other end is always at the centre, being the last idea formed, which is always present the moment when considered: and therefore, according as there is a greater number of ideas between the present sensation or thought in the centre and any other, the soul is apprehensive of a larger portion of time interposed.

Mr. Locke has not entered into so minute a detail of this manufacture of ideas; but he ascribes to the mind a very considerable hand in forming its own ideas. With regard to our sensations, the mind is passive, "they being produced in us, only by different degrees and modes of motion in our animal spirits, variously agitated by external objects:" these, however, cease to be, as soon as they cease to be perceived; but, by the faculties of memory and imagination, "the mind has an ability, when it wills, to revive them again, and, as it were, to paint them anew upon itself, though some with more, some with less difficulty."

As to the ideas of reflection, he ascribes them to no other cause but to that attention which the mind is capable of giving to its own operations: these, therefore, are formed by the mind itself. He ascribes likewise to the mind the power of compounding its simple ideas into complex ones of various forms; of repeating

them, and adding the repetitions together; of dividing and classing them; of comparing them, and, from that comparison, of forming the ideas of their relation: nay, of forming a general idea of a species or genus, by taking from the idea of an individual every thing by which it is distinguished from other individuals of the kind, till at last it becomes an abstract general idea, common to all the individuals of the kind.

These, I think, are the powers which Mr. Locke ascribes to the mind itself in the fabrication of its ideas. Bishop Berkeley, as we shall see afterwards, abridged them considerably,* and Mr. Hume much more.

VI. The ideas we have of the various qualities of bodies are not all, as Mr. Locke thinks, of the same kind. Some of them are images or resemblances of what is really in the body; others are not. There are certain qualities inseparable from matter; such as extension, solidity, figure, mobility. Our ideas of these are real resemblances of the qualities in the body; and these he calls primary qualities: but colour, sound, taste, smell, heat, and cold, he calls secondary qualities, and thinks that they are only powers in bodies of producing certain sensations in us; which sensations have nothing resembling them, though they are commonly thought to be exact resemblances of something in the body. "Thus," says he, "the idea of heat or light, which we receive, by our eye or touch, from the sun, are commonly thought real qualities existing in the sun, and something more than mere powers in it."

The names of primary and secondary qualities, were, I believe, first used by Mr. Locke: but the distinction, which they express, was well understood by Des Cartes, and is explained by him in his "Principia," Part I. sect. 69—71.

VII. *Meaning of the word "idea" in Locke's Essay ambiguous.*—Although no author has more merit than Mr. Locke, in pointing out the ambiguity of words, and resolving, by that means, many knotty questions, which had tortured the wits of the schoolmen; yet, I apprehend he has been sometimes misled by the ambiguity of the word *idea,* which he uses so often almost in every page of his Essay.

In the explication given of this word, we took notice of two meanings given to it; (1) a popular, and (2) a philosophical. In the popular meaning, to have an idea of any thing, signifies nothing more than to think of it.

Although the operations of the mind are most properly and naturally, and indeed most commonly in all vulgar languages, expressed by active verbs, there is another way of expressing them less common, but equally well understood. To think of a thing, and to have a thought of it; to believe a thing, and to

* He removed *reflection, comparing* and *abstraction.*

have a belief of it; to see a thing, and have a sight of it; to conceive a thing, and to have a conception, notion, or idea of it, are phrases perfectly synonymous. In these phrases, the thought means nothing but the act of thinking; the belief, the act of believing; and the conception, notion, or idea, the act of conceiving. To have a clear and distinct idea, is, in this sense, nothing else but to conceive the thing clearly and distinctly. When the word *idea* is taken in this popular sense, there can be no doubt of our having ideas in our minds. To think without ideas would be to think without thought, which is a manifest contradiction.

But there is another meaning of the word *idea* peculiar to philosophers, and grounded upon a philosophical theory, which the vulgar never think of. Philosophers, ancient and modern, have maintained, that the operations of the mind, like the tools of an artificer, can only be employed upon objects that are present in the *mind*, or in the *brain*, where the mind is supposed to reside. Therefore, objects that are distant, in time or place, must have a representative in the mind, or in the brain; some image or picture of them, which is the object that the mind contemplates. This representative image was, in the old philosophy, called a *species* or *phantasm*. Since the time of Des Cartes, it has more commonly been called an *idea;* and every thought is conceived to have an idea for its object. As this has been a common opinion among philosophers, as far back as we can trace philosophy, it is the less to be wondered at, that they should be apt to confound the operation of the mind in thinking, with the idea or object of thought, which is supposed to be its inseparable concomitant.

If we pay any regard to the common sense of mankind, thought and the object of thought are different things, and ought to be distinguished. It is true, thought cannot be without an object; for every man who thinks must think of something; but the object he thinks of is one thing, his thought of that object is another thing. They are distinguished in all languages even by the vulgar; and many things may be affirmed of thought, that is, of the operation of the mind in thinking, which cannot without error, and even absurdity, be affirmed of the object of that operation.

VIII. *A principal defect in Locke's system.*—[From this, I think it is evident, that if the word *idea*, in a work where it occurs in every paragraph, be used without any intimation of the ambiguity of the word, sometimes to signify thought, or the operation of the mind in thinking, sometimes to signify those internal objects of thought which philosophers suppose, this must occasion confusion in the thoughts both of the author and of the readers.] I take this to be the greatest blemish in the

"Essay on Human Understanding." I apprehend this is the true source of several paradoxical opinions in that excellent work, which I shall have occasion to take notice of.

[Here it is very natural to ask, (1) Whether it was Mr. Locke's opinion, that ideas are the *only* objects of thought? or, (2) Whether it is not possible for men to think of things which are not ideas in the mind?]

To this question it is not easy to give a direct answer. On the one hand, he says often, in distinct and studied expressions, that the term *idea* stands for *whatever* is the object of the understanding when a man thinks, or whatever it is which the mind can be employed about in thinking: that the mind perceives nothing but its own ideas: that all knowledge consists in the perception of the agreement or disagreement of our ideas: that we can have no knowledge further than we have ideas. These, and many other expressions of the like import, evidently imply, that every object of thought must be an idea, and *can be nothing else*.

On the other hand, I am persuaded that Mr. Locke would have acknowledged, that we may think of Alexander the Great, or of the planet Jupiter, and of numberless things, which he would have owned are not ideas in the mind, but objects which exist *independent* of the mind that thinks of them.

How shall we reconcile the two parts of this apparent contradiction? All I am able to say upon Mr. Locke's principles to reconcile them, is this, That we cannot think of Alexander or of the planet Jupiter, unless we have in our minds an idea, that is, an image or picture of those objects. The idea of Alexander is an image, or picture, or representation of that hero in my mind; and this idea is the immediate object of my thought when I think of Alexander. That this was Locke's opinion, and that it has been generally the opinion of philosophers, there can be no doubt.

But, instead of giving light to the question proposed, it seems to involve it in greater darkness.

IX. *A difficulty is presented whichever may have been Locke's real meaning.*—When I think of Alexander, I am told there is an image or idea of Alexander in my mind, which is the immediate object of this thought. (1) [The necessary consequence of this seems to be, that there are two objects of this thought; the idea, which is in the mind, and the person represented by that idea; the first, the immediate object of the thought, the last, the object of the same thought, but not the immediate object.] This is a hard saying; for *it makes every thought of things external to have a double object.* Every man is conscious of his thoughts, and yet, upon attentive reflection, he perceives no such duplicity in the object he thinks about. Sometimes men see objects double, but they always know when they do so: and I

know of no philosopher who has expressly owned this duplicity in the object of thought, though it follows necessarily from maintaining, that, in the same thought, there is one object, that is immediate and in the mind itself, and another object, which is not immediate, and which is not in the mind.

(2) [Besides this, it seems very hard, or rather impossible, to understand what is meant by an object of thought, that is not an immediate object of thought. A body in motion may move another that was at rest, by the medium of a third body that is interposed. This is easily understood; but *we are unable to conceive any medium interposed between a mind and the thought of that mind;* and, to think of any object by a medium, seems to be words without any meaning.] [There is a sense in which a thing may be said to be perceived by a medium. Thus, any kind of sign may be said to be the medium by which I perceive or understand the thing signified. The sign, by custom, or compact, or perhaps by nature, introduces the thought of the thing signified. *But here the thing signified, when it is introduced to the thought, is an object of thought no less immediate than the sign was before:* And there are here two objects of thought, *one succeeding another*, which we have shown is not the case with respect to an idea, and the object it represents.]

[I apprehend, therefore, that if philosophers will maintain, that ideas in the mind are the only immediate objects of thought, they will be forced to grant that they are the *sole* objects of thought, and that it is impossible for men to think of any thing else.] Yet, surely Mr. Locke believed that we can think of many things that are not ideas in the mind; but he seems not to have perceived, that the maintaining that ideas in the mind are the only immediate objects of thought, must necessarily draw this consequence along with it.

The consequence, however, was seen by Bishop Berkeley and Mr. Hume, who rather chose to admit the consequence than to give up the principle from which it follows.

X. *Three synonyms to the word "idea," and three different meanings also, occur in Locke's Essay.*—Perhaps it was unfortunate for Mr. Locke that he used the word idea so very frequently, as to make it very difficult to give the attention necessary to put it always to the same meaning. And it appears evident, that, in many places, he means nothing more by it but the notion or conception we have of any object of thought; that is, the act of the mind in conceiving it, and not the object conceived.

[In explaining this word, he says, that he uses it for whatever is meant by phantasm, notion, species. Here are three synonyms to the word *idea*. The first and last are very proper to express the philosophical meaning of the word, being terms of art in the Peripatetic philosophy, and signifying images of

external things in the mind, which, according to that philosophy, are objects of thought. But the word *notion* is a word in common language, whose meaning agrees exactly with the popular meaning of the word *idea*, but not with the philosophical.]

When these two different meanings of the word *idea* are confounded in *a studied explication of it*, there is little reason to expect that they should be carefully distinguished in the frequent use of it. There are many passages in the Essay, in which, to make them intelligible, the word *idea* must be taken in one of those senses, and many others, in which it must be taken in the other. It seems probable, that the author, not attending to this ambiguity of the word, used it in the one sense or the other, as the subject matter required; and the far greater part of his readers have done the same.

[There is a third sense, in which he uses the word not unfrequently, to signify objects of thought *that are not in the mind, but external.* Of this he seems to be sensible, and somewhere makes an apology for it. When he affirms, as he does in innumerable places, that all human knowledge consists in the perception of the agreement or disagreement of our ideas, it is impossible to put a meaning upon this, consistent with his principles, unless he means by ideas *every object of human thought, whether mediate or immediate*; everything, in a word, that can be signified by the subject, or by the predicate of a proposition.]

Thus we see, that the word *idea* has three different meanings in the Essay; and the author seems to have used it sometimes in one, sometimes in another, without being aware of any change in the meaning. The reader slides easily into the same fallacy, that meaning occurring most readily to his mind which gives the best sense to what he reads. I have met with persons professing no slight acquaintance with the "Essay on Human Understanding," who maintained that the word *idea*, wherever it occurs, means nothing more than thought; and that where he speaks of ideas as images in the mind, and as objects of thought, he is not to be understood as speaking properly, but figuratively or analogically: and indeed I apprehend, that it would be no small advantage to many passages in the book, if they could admit of this interpretation.

XI. *The theory of ideas has led philosophers into two remarkable errors.*—[It is not the fault of this philosopher alone to have given too little attention to the distinction between the operations of the mind, and the objects of those operations. Although this distinction be familiar to the vulgar, and found in the structure of all languages, (1) philosophers, when they speak of ideas, often confound the two together: and their theory concerning ideas has led them to do so: ☞ For ideas being supposed to be a shadowy kind of beings, intermediate

between the thought, and the object of thought, sometimes seem to coalesce with the thought, sometimes with the object of thought, and sometimes to have a distinct existence of their own.]

[(2) The same philosophical theory of ideas has led philosophers to confound the different operations of the understanding, and to call them all by the name of perception.] Mr. Locke, though not free from this fault, is not so often chargeable with it as some who came after him. *The vulgar give the name of perception to that immediate knowledge of external objects which we have by our external senses.* This is its proper meaning in our language, though sometimes it may be applied to other things metaphorically or analogically. When I think of any thing that does not exist, as of the republic of Oceana, I do not perceive it; I only conceive or imagine it. When I think of what happened to me yesterday, I do not perceive, but remember it. When I am pained with the gout, it is not proper to say I perceive the pain; I feel it, or am conscious of it. It is not an object of perception, but of sensation and of consciousness. So far the vulgar distinguish very properly the different operations of the mind, and never confound the names of things so different in their nature. But the theory of ideas leads philosophers to conceive all those operations to be of one nature, and to give them one name. They are all, according to that theory, the perception of ideas in the mind. Perceiving, remembering, imagining, being conscious, are all perceiving ideas in the mind, and are called *perceptions*. Hence it is that philosophers speak of the perceptions of memory and the perceptions of imagination. They make sensation to be a perception; and everything we perceive by our senses to be an idea of sensation. Sometimes they say, that they are conscious of the ideas in their own minds, sometimes that they perceive them.

XII. *The vulgar express the operations of the mind less ambiguously than philosophers.*—However improbable it may appear that philosophers, who have taken pains to study the operations of their own minds, should express them less properly, and less distinctly than the vulgar, it seems really to be the case; and the only account that can be given of this strange phenomenon, I take to be this: that the vulgar seek no theory to account for the operations of their minds; they know that they see, and hear, and remember, and imagine; and those who think distinctly will express these operations distinctly, as their consciousness represents them to the mind. But philosophers think they ought to know not only that there are such operations, but *how* they are performed; how they see, and hear, and remember, and imagine; and, having invented a theory to explain these operations, by ideas or images in the mind, they

suit their expressions to their theory; and, as a false comment throws a cloud upon the text, so a false theory darkens the phenomena which it attempts to explain.]

We shall examine this theory afterwards. Here I would only observe, that if it is not true, it may be expected that it should lead ingenious men who adopt it to confound the operations of the mind with their objects, and with one another, even where the common language of the unlearned clearly distinguishes them. One that trusts to a false guide is in greater danger of being led astray than he who trusts his own eyes, though he should be but indifferently acquainted with the road.

QUESTIONS FOR EXAMINATION.

Locke's consciousness of the weakness of his arguments for the existence of an external world shown?

Difference between Locke and Des Cartes as to the origin of our ideas?

What opinion originated with Locke?

What question has employed philosophers much since the time of Des Cartes?

The greatest blemish in Locke's Essay on the Human Understanding?

Difficulty of ascertaining whether Locke thought that ideas were the *only* objects of the mind in thought?

Can a thing ever be said to be perceived by a *medium?*

Three synonyms for "idea" given by Locke: in which sense does he employ the term?

Philosophers have fallen into two remarkable errors from their theory of ideas?

Why do the vulgar describe the operations of the mind more intelligibly than philosophers?

CHAPTER X.

OF THE SENTIMENTS OF BISHOP BERKELEY.

I. GEORGE BERKELEY, afterwards Bishop of Cloyne, published his new "Theory of Vision" in 1709; his "Treatise on the Principles of Human Knowledge" in 1710; and his "Dialogues between Hylas and Philonous" in 1713; being then a fellow of Trinity College, Dublin. He is acknowledged universally to have great merit as an excellent writer, and a very acute and clear reasoner on the most abstract subjects, not to speak of his virtues as a man, which were very conspicuous; yet the doctrine chiefly held forth in the treatises above mentioned, especially in the two last, has generally been thought so very absurd, that few can be brought to think that he either believed it himself, or that he seriously meant to persuade others of its truth.

He maintains, and thinks he has demonstrated, by a variety of arguments, grounded on principles of philosophy universally received, that there is no such thing as matter in the universe;

that sun and moon, earth and sea, our own bodies, and those of our friends, are nothing but ideas in the minds of those who think of them, and that they have no existence when they are not the objects of thought; that all that is in the universe may be reduced to *two categories*, to wit, *minds*, and *ideas in the mind.*

But however absurd this doctrine might appear to the unlearned, who consider the existence of the objects of sense as the most evident of all truths, and what no man in his senses can doubt; the philosophers, who had been accustomed to consider ideas as the immediate objects of all thought, had no title to view this doctrine of Berkeley in so unfavourable a light.

II. *Objection to Malebranche's argument for the existence of an external world.*—They were taught by Des Cartes, and by all that came after him, that the existence of the objects of sense is not self-evident, but requires to be proved by arguments; and although Des Cartes, and many others, had laboured to find arguments for this purpose, there did not appear to be that force and clearness in them which might have been expected in a matter of such importance. Mr. Norris had declared, that after all the arguments that had been offered, the existence of an external world is only probable, but by no means certain. Malebranche thought it rested upon the authority of revelation, and that the arguments drawn from reason were not perfectly conclusive. [Others thought, that the argument from revelation was a mere sophism, because revelation comes to us by our senses, and must rest upon their authority.]*

III. *Advantages proposed by the system of Berkeley.*—Thus we see that the new philosophy had been making gradual approaches towards Berkeley's opinion; and, whatever others might do, the philosophers had no title to look upon it as absurd, or unworthy of a fair examination. Several authors attempted to answer his arguments, but with little success, and others acknowledged that they could neither answer them, nor assent to them. It is probable the Bishop made but few converts to his doctrine; but it is certain he made some; and that he himself continued, to the end of his life, firmly persuaded not only of its truth but of its great importance for the improvement of human knowledge, and especially for the defence of religion. (Dial. Pref.) [" If the principles which I here endeavour to propagate are admitted for true, the consequences which I think evidently flow from thence are, that *atheism* and *scepticism* will be utterly destroyed, many intricate points made plain, great difficulties solved, several useless parts of science retrenched, *speculation referred to practice*, and men reduced from paradoxes to common sense."]

* This objection answered in p. 124.

In the "Theory of Vision," he goes no further than to assert, that the objects of sight are nothing but ideas in the mind, granting, or at least not denying, that there is a tangible world, which is really external, and which exists whether we perceive it or not. [Whether the reason of this was, that his system had not, at that time, wholly opened to his own mind, or whether he thought it prudent to let it enter into the minds of his readers by degrees, I cannot say. I think he insinuates the last as the reason in the "Principles of Human Knowledge."]

IV. *Valuable distinction first observed by Berkeley.*—[The "Theory of Vision," however, taken by itself, and without relation to the main branch of his system, contains very important discoveries, and marks of great genius. He distinguishes, more accurately than any that went before him, between the immediate objects of sight, and those of the other senses which are early associated with them: he shows, that distance, of itself, and immediately, is not seen; but that we learn to judge of it by certain sensations and perceptions which are connected with it. This is a very important observation; and I believe was first made by this author.] It gives much new light to the operations of our senses, and serves to account for many phenomena in optics, of which the greatest adepts in that science had always either given a false account, or acknowledged that they could give none at all.

V. *How far true.*—[We may observe by the way, that the ingenious author seems not to have attended to a distinction, by which his general assertion ought to have been limited. It is true that the distance of an object from the eye is not immediately seen; but there is a certain kind of distance of one object from another which we see immediately. The author acknowledges that there is a visible extension, and visible figures, which are proper objects of sight; there must therefore be a visible distance.] Astronomers call it angular distance; and although they measure it by the angle, which is made by two lines drawn from the eye to the two distant objects, yet it is immediately perceived by sight, even by those who never thought of that angle.

He led the way in showing how we learn to perceive the distance of an object from the eye, though this speculation was carried further by others who came after him. He made the distinction between that extension and figure which we perceive by sight only, and that which we perceive by touch; calling the first, visible, the last, tangible extension and figure. He showed likewise, that tangible extension, and not visible, is the object of geometry, although mathematicians commonly use visible diagrams in their demonstrations.

The notion of extension and figure which we get from sight

only, and that which we get from touch, have been so constantly conjoined from our infancy in all the judgments we form of the objects of sense, that it required great abilities to distinguish them accurately, and to assign to each sense what truly belongs to it; "so difficult a thing it is," as Berkeley justly observes, "to dissolve an union so early begun, and confirmed by so long a habit." This point he has laboured, through the whole of the "Essay on Vision," with that uncommon penetration and judgment which he possessed, and with as great success as could be expected in a first attempt upon so abstruse a subject.

VI. He concludes this essay, by showing, in no less than seven sections, the notions which an intelligent being, endowed with sight, without the sense of touch, might form of the objects of sense. This speculation, to shallow thinkers, may appear to be egregious trifling. To Bishop Berkeley it appeared in another light, and will do so to those who are capable of entering into it, and who know the importance of it, in solving many of the phenomena of vision. He seems, indeed, to have exerted more force of genius in this than in the main branch of his system.

In the new philosophy, the pillars by which the existence of a material world was supported, were so feeble, that it did not require the force of a Samson to bring them down; and in this we have not so much reason to admire the strength of Berkeley's genius, as his boldness in publishing to the world an opinion, which the unlearned would be apt to interpret as the sign of a crazy intellect. A man who was firmly persuaded of the doctrine universally received by philosophers concerning ideas, if he could but take courage to call in question the existence of a material world, would easily find unanswerable arguments in that doctrine. "Some truths there are," says Berkeley, "so near and obvious to the mind, that a man need only open his eyes to see them. Such," he adds, "I take this important one to be, that all the choir of heaven, and furniture of the earth; in a word, all those bodies which compose the mighty frame of the world; have not any subsistence without a mind."—Princ. sect. 6.

VII. *Foundation on which this system rests.*—The principle from which this important conclusion is obviously deduced, is laid down in the first sentence of his principles of knowledge as evident; and indeed it had always been acknowledged by philosophers. ["It is evident," says he, "to any one who takes a survey of the objects of human knowledge, that they are either ideas actually imprinted on the senses, or else such as are perceived, by attending to the passions and operations of the mind; or, lastly, ideas formed by help of memory and imagination, either compounding, dividing, or barely representing those originally perceived in the foresaid ways."]

This is the foundation on which the whole system rests. If this be true, then, indeed, the existence of a material world must be a dream that has imposed upon all mankind from the beginning of the world.

The foundation on which such a fabric rests ought to be very solid, and well established; yet Berkeley says nothing more for it than that it is evident. If he means that it is self-evident, this, indeed, might be a good reason for not offering any direct argument in proof of it. But I apprehend this cannot justly be said. Self-evident propositions are those which appear evident to every man of sound understanding who apprehends the meaning of them distinctly, and attends to them without prejudice. Can this be said of this proposition, that all the objects of our knowledge are ideas in our own minds? I believe, that, to any man uninstructed in philosophy, this proposition will appear very improbable, if not absurd. However scanty his knowledge may be, he considers the sun and moon, the earth and sea, as objects of it: and it will be difficult to persuade him, that those objects of his knowledge are ideas in his own mind, and have no existence when he does not think of them. If I may presume to speak my own sentiments, I once believed this doctrine of ideas so firmly, as to embrace the whole of Berkeley's system in consequence of it; till, finding other consequences to follow from it, which gave me more uneasiness than the want of a material world, it came into my mind, more than forty years ago, to put the question, What evidence have I for this doctrine, that all the objects of my knowledge are ideas in my own mind? From that time to the present, I have been candidly and impartially, as I think, seeking for the evidence of this principle, but can find none, excepting the authority of philosophers.

We shall have occasion to examine its evidence afterwards. I would at present only observe, that all the arguments brought by Berkeley against the existence of a material world are grounded upon it; and that he has not attempted to give any evidence for it, but takes it for granted, as other philosophers had done before him.

But supposing this principle to be true, Berkeley's system is impregnable. No demonstration can be more evident than his reasoning from it. [Whatever is perceived is an idea, and an idea can only exist in a mind. It has no existence when it is not perceived; nor can there be any thing like an idea, but an idea.]

So sensible he was, that it required no laborious reasoning to deduce his system from the principle laid down, that he was afraid of being thought needlessly prolix in handling the subject, and makes an apology for it. (Princ. sect. 22.) "To what purpose is it," says he, "to dilate, upon that which may be demon-

strated, with the utmost evidence, in a line or two, to any one who is capable of the least reflection." But though his demonstration might have been comprehended in a line or two, he very prudently thought, that an opinion, which the world would be apt to look upon as a monster of absurdity, would not be able to make its way at once, even by the force of a naked demonstration. He observes justly, (Dial. 2,) "That though a demonstration be never so well grounded, and fairly proposed, yet, if there is, withal, a strain of prejudice, or a wrong bias on the understanding, can it be expected to perceive clearly, and adhere firmly to the truth? No; there is need of time and pains; the attention must be awakened and detained, by a frequent repetition of the same thing, placed often in the same, often in different lights."

It was, therefore, necessary to dwell upon it, and turn it on all sides till it became familiar; to consider all its consequences, and to obviate every prejudice and prepossession that might hinder its admittance. It was even a matter of some difficulty to fit it to common language, so far as to enable men to speak and reason about it intelligibly. Those who have entered seriously into Berkeley's system, have found, after all the assistance which his writings give, that time and practice are necessary to acquire the habit of speaking and thinking distinctly upon it.

Berkeley foresaw the opposition that would be made to his system, from two different quarters; *first*, from the philosophers; and, *secondly*, from the vulgar, who are led by the plain dictates of nature. The first he had the courage to oppose openly and avowedly; the second he dreaded much more, and therefore takes a great deal of pains, and, I think, uses some art, to court into his party. This is particularly observable in his Dialogues. He sets out with a declaration, (Dial. 1,) "That, of late, he had quitted several of the sublime notions he had got in the schools of the philosophers for vulgar opinions," and assures Hylas, his fellow dialogist, "That, since this revolt from metaphysical notions to the plain dictates of nature and common sense, he found his understanding strangely enlightened; so that he could now easily comprehend a great many things, which before were all mystery and riddle."—Pref. to Dial. "If his principles are admitted for true, men will be reduced from paradoxes to common sense." At the same time, he acknowledges, "That they carry with them a great opposition to the prejudices of philosophers, which have so far prevailed against the common sense and natural notions of mankind."

When Hylas objects to him, (Dial. 3,) "You can never persuade me, Philonous, that the denying of matter or corporeal substance is not repugnant to the universal sense of mankind;" he answers, "I wish both our opinions were fairly stated, and

submitted to the judgment of men who had plain common sense, without the prejudices of a learned education. Let me be represented as one who trusts his senses, who thinks he knows the things he sees and feels, and entertains no doubt of their existence. If by material substance is meant only sensible body, that which is seen and felt, (and the unphilosophical part of the world, I dare say, mean no more,) then I am more certain of matter's existence than you or any other philosopher pretend to be. If there be anything which makes the generality of mankind averse from the notions I espouse, it is a misapprehension that I deny the reality of sensible things: but as it is you who are guilty of that and not I, it follows, that, in truth, their aversion is against your notions, and not mine. I am content to appeal to the common sense of the world for the truth of my notion. I am of a vulgar cast, simple enough to believe my senses, and to leave things as I find them. I cannot, for my life, help thinking that snow is white, and fire hot."

VIII. *The opinions of the vulgar and of the philosophers partly correct.*—When Hylas is at last entirely converted, he observes to Philonous, "After all, the controversy about matter, in the strict acceptation of it, lies altogether between you and the philosophers, whose principles, I acknowledge, are not near so natural, or so agreeable to the common sense of mankind, and Holy Scripture, as yours." Philonous observes in the end, "That he does not pretend to be a setter up of new notions, his endeavours tend only to unite, and to place in a clearer light, *that truth which was before shared between the vulgar and the philosophers;* [the former being of opinion, that those things they immediately perceive are the *real things*, and the latter, that the things immediately perceived are *ideas* which exist only in the mind; which two things put together do, in effect, constitute the substance of what he advances."] and he concludes by observing, "That those principles, which at first view lead to scepticism, pursued to a certain point, bring men back to common sense."

These passages show sufficiently the author's concern to reconcile his system to the plain dictates of nature and common sense, while he expresses no concern to reconcile it to the received doctrines of philosophers. He is fond to take part with the vulgar against the philosophers, and to vindicate common sense against their innovations. What pity is it that he did not carry this suspicion of the doctrine of philosophers so far as to doubt of that philosophical tenet on which his whole system is built, to wit, that the things immediately perceived by the senses are ideas which exist only in the mind!

IX. *The vulgar and the Berkeleian opinions reconciled.*—After all, it seems no easy matter to make the vulgar opinion and that

of Berkeley to meet. And to accomplish this, he seems to me to draw each out of its line towards the other, not without some straining.

The vulgar opinion he reduces to this, that the very things which we *perceive by our senses* do really exist. This he grants. For these things, says he, are *ideas* in our minds, or complexions of ideas, to which we give one name, and consider as one thing; these are the immediate objects of sense, and these do really exist. As to the notion, that those things have an *absolute external existence*, independent of being perceived by any mind, he thinks that this is no notion of the vulgar, but a refinement of philosophers; and that the notion of material substance, as a *substratum*, or support of that collection of sensible qualities to which we give the name of an apple or a melon, is likewise an invention of philosophers, and is not found with the vulgar till they are instructed by philosophers. [The substance not being an *object of sense*, the vulgar never think of it; or, if they are taught the use of the word, they mean no more by it but *that collection of sensible qualities* which they, from finding them conjoined in nature, have been accustomed to call by one name, and to consider as one thing.]

Thus he draws the vulgar opinion near to his own; and, that he may meet it half way, he acknowledges *that material things have a real existence out of the mind of this or that person;* but the question, says he, between the materialist and me, is, Whether they have an absolute existence distinct from their being perceived *by God*, and exterior to *all* minds? This, indeed, he says, some heathens and philosophers have affirmed; but whoever entertains notions of the Deity, *suitable to the Holy Scripture*, will be of another opinion.

X. *Objection to the opinion "that objects do not exist when they are not perceived unless in the mind of some other."*—[But here an objection occurs, which it required all his ingenuity to answer. It is this: The ideas in my mind cannot be the same with the ideas of any other mind; therefore if the objects I perceive be only ideas, it is impossible that the objects I perceive can exist any where, when I do not perceive them; and it is impossible that two or more minds *can perceive the same object.*]

☞ To this Berkeley answers, that this objection presses no less the opinion of the materialist philosopher than his. But the difficulty is, to make his opinion coincide with the notions of the vulgar, who are firmly persuaded that the very identical objects which they perceive continue to exist when they do not perceive them; and who are no less firmly persuaded that when ten men look at the sun or the moon, they all see the same individual object.

XI. *Answered.*—To reconcile this repugnancy, he observes, (Dial. 3,) ["That if the term *same* be taken in the vulgar acceptation, it is certain, (and not at all repugnant to the principles he maintains,) that different persons may perceive the same thing; or the same thing or idea exist in different minds. Words are of arbitrary imposition; and since men are used to apply the word *same, where no distinction or variety is perceived*, and he does not pretend to alter their perceptions it follows, that as men have said before, *several saw the same thing;*] so they may, upon like occasions, still continue to use the same phrase without any deviation, either from propriety of language or the truth of things. [But if the term *same* be used in the acceptation of philosophers, who pretend to an abstracted notion of identity, then, according to their sundry definitions of this term, (for it is not yet agreed wherein that philosophic identity consists,) it may or may not be possible for divers persons to perceive the same thing.] But whether philosophers shall think fit to call a thing the *same* or no, is, I conceive, of small importance. Men may dispute about identity and diversity, without any real difference in their thoughts and opinions, abstracted from names."

Upon the whole, I apprehend that Berkeley has carried this attempt to reconcile his system to the vulgar opinion further than reason supports him: and he was no doubt tempted to do so from a just apprehension that, in a controversy of this kind, the common sense of mankind is the most formidable antagonist.

Berkeley has employed much pains and ingenuity to show that his system, if received and believed, would not be attended with those bad consequences in the conduct of life which superficial thinkers may be apt to impute to it. His system does not take away or make any alteration upon our pleasures or our pains. Our sensations, whether agreeable or disagreeable, are the same upon his system as upon any other. These are real things, and the only things that interest us. They are produced in us according to certain laws of nature, by which our conduct will be directed in attaining the one, and avoiding the other: And it is of no moment to us whether they are produced immediately by the operation of some powerful intelligent being upon our minds, or by the mediation of some inanimate being which we call *matter*.

XII. *This system overturns atheism.*—[The evidence of an all-governing Mind, so far from being weakened, seems to appear even in a more striking light upon his hypothesis, than upon the common one. The powers which inanimate matter is supposed to possess, have always been the strong hold of atheists, to which they had recourse in defence of their system.] This fortress of atheism must be most effectually overturned, if there is no such thing as matter in the universe. In all this the bishop reasons

justly and acutely. But there is one uncomfortable consequence of his system which he seems not to have attended to, and from which it will be found difficult, if at all possible, to guard it.

XIII. *One uncomfortable consequence of the theory of Berkeley.*—[The consequence I mean is this, that although it leaves us sufficient evidence of *a supreme intelligent mind*, it seems to take away all the evidence we have of other intelligent beings *like ourselves*. What I call a father, a brother, or a friend, is only a parcel of ideas* in my own mind; and being ideas in my mind, they cannot possibly have that relation to another mind which they have to mine, any more than the pain felt by me can be the individual pain felt by another.] I can find no principle in Berkeley's system, which affords me even probable ground to conclude that there are other intelligent beings, like myself, in the relations of father, brother, friend, or fellow-citizen. [I am left alone, as the only creature of God in the universe, in that forlorn state of *egoism* into which it is said some of the disciples of Des Cartes were brought by his philosophy.]

Of all the opinions that have ever been advanced by philosophers, this of Bishop Berkeley, that there is no material world, seems the strangest and the most apt to bring philosophy into ridicule with plain men, who are guided by the dictates of nature and common sense. And it will not, I apprehend, be improper to trace this progeny of the doctrine of ideas from its origin, and to observe its gradual progress, till it acquired such strength, that a pious and learned bishop had the boldness to usher it into the world, as demonstrable from the principles of philosophy universally received, and as an admirable expedient for the advancement of knowledge, and for the defence of religion.

XIV. *The existence of an external material world not doubted by the Peripatetics.*—[During the reign of the Peripatetic philosophy, men were little disposed to doubt, and much to dogmatize. The existence of the objects of sense was held as a first principle; and the received doctrine was, that the sensible species or idea is the very form of the external object, just separated from the matter of it, and sent into the mind that perceives it; so that we find no appearance of scepticism about the existence of matter under that philosophy.]

[Des Cartes taught men to doubt even of those things that had been taken for first principles. He rejected the doctrine of species or ideas coming from objects, but still maintained that what we immediately perceive is not the external object, but an idea or image of it in our mind. This led some of his disciples into egoism, and to disbelieve the existence of every creature in the universe but themselves and their own ideas.]

* Proving by their existence that my mind exists, but not that another's exists.

XV. *Cartesian arguments for the existence of an external world.*—But Des Cartes himself, either from dread of the censure of the church, which he took great care not to provoke, or to shun the ridicule of the world, which might have crushed his system at once, as it did that of the Egoists; or, perhaps, from inward conviction, was resolved to support the existence of matter. To do this consistently with his principles, he found himself obliged to have recourse to arguments that are far-fetched, and not very cogent. [Sometimes he argues, (1) that our senses are given us by God, who is no deceiver; and therefore we ought to believe their testimony. But this argument is weak; because, according to his principles, *our senses testify no more but that we have certain ideas:* and if we draw conclusions from this testimony, which the premises will not support, *we deceive ourselves.* To give more force to this weak argument, he sometimes adds, that (2) we have by nature a strong *propensity to believe that there is an external world* corresponding to our ideas.]

XVI.—Malebranche thought that this strong propensity is not a sufficient reason for believing the existence of matter; and that it is to be received as an article of faith, not certainly discoverable by reason. [He is aware that faith comes by hearing; and that it may be said that prophets, apostles, and miracles, are only ideas in our minds. But to this he answers, That though these things are only ideas, yet faith turns them into realities; and this answer, he hopes, will satisfy those who are not too morose.]*

It may, perhaps, seem strange that Locke, who wrote so much about ideas, should not see those consequences which Berkeley thought so obviously deducible from that doctrine. Mr. Locke surely was not willing that the doctrine of ideas should be thought to be loaded with such consequences. He acknowledges that the existence of a material world is not to be received as a first principle, nor is it demonstrable; but he offers the best arguments for it he can, and supplies the weakness of his arguments by this observation, that we have such evidence as is sufficient to direct us in pursuing the good, and avoiding the ill we may receive from external things, beyond which we have no concern.

XVII.—*Locke seems to have anticipated the theory of Berkeley.*—There is, indeed, a single passage in Locke's Essay which may lead one to conjecture that he had a glimpse of that system which Berkeley afterwards advanced, but thought proper to suppress it within his own breast. The passage is in book iv. chap. 10, where, having proved the existence of an eternal intelligent mind, he comes to answer those who conceive that matter also

* Vide sect. ii. page 115.

must be eternal; because we cannot conceive how it could be made out of nothing: and having observed that the creation of minds requires no less power than the creation of matter, he adds what follows: "Nay, possibly, if we could emancipate ourselves from vulgar notions, and raise our thoughts, as far as they would reach, to a closer contemplation of things, we might be able to aim at some dim and seeming conception, how *matter might at first be made,* and begin to exist by the power of that eternal first Being, but to give beginning and being to a spirit, would be found a more inconceivable effect of omnipotent power. But this being what would perhaps lead us too far from the notions on which the philosophy now in the world is built, it would not be pardonable to deviate so far from them, or to inquire, so far as grammar itself would authorize, if the common settled opinion opposes it; especially in this place, where the received doctrine serves well enough to our present purpose."

It appears from this passage, *first,* That Mr. Locke had some system in his mind, perhaps not fully digested, to which we might be led, by raising our thoughts to a closer contemplation of things, and emancipating them from vulgar notions. *Secondly,* That this system would lead so far from the notions on which the philosophy now in the world is built, that he thought proper to keep it within his own breast. *Thirdly,* That it might be doubted whether this system differed so far from the common settled opinion in reality, as it seemed to do in words. *Fourthly,* By this system, we might possibly be enabled to aim at some dim and seeming conception how matter might at first be made and begin to exist; but it would give no aid in conceiving how a spirit might be made. These are the characteristics of that system which Mr. Locke had in his mind, and thought it prudent to suppress. May they not lead to a probable conjecture, that it was the same, or something similar to that of Bishop Berkeley? According to Berkeley's system, God's creating the material world at such a time, means no more but that he decreed from that time, to produce ideas in the minds of finite spirits, in that order, and according to those rules, which we call the laws of nature. This, indeed, removes all difficulty, in conceiving how matter was created; and Berkeley does not fail to take notice of the advantage of his system on that account. But his system gives no aid in conceiving how a spirit may be made. It appears, therefore, that every particular Mr. Locke has hinted, with regard to that system which he had in his mind, but thought it prudent to suppress, tallies exactly with the system of Berkeley. If we add to this, that Berkeley's system follows from Mr. Locke's, by very obvious consequence, it seems reasonable to conjecture, from the passage now quoted, that he was not unaware of that consequence, but left it to those who should come

after him to carry his principles their full length, when they should by time be better established, and able to bear the shock of their opposition to vulgar notions. Mr. Norris, in his "Essay towards the Theory of the ideal or intelligible World," published in 1701, observes, that the material world is not an object of sense; because sensation is within us, and has no object. Its existence, therefore, he says, is a collection of reason, and not a very evident one.

From this detail we may learn, that the doctrine of ideas, as it was new modelled by Des Cartes, looked with an unfriendly aspect upon the material world; and although philosophers were very unwilling to give up either, they found it a very difficult task to reconcile them to each other. In this state of things Berkeley, I think, is reputed the first who had the daring resolution to give up the material world altogether, as a sacrifice to the received philosophy of ideas.

XIX. *Originality of Collier's sentiments may be doubted.*—But we ought not in this historical sketch to omit an author of far inferior name, Arthur Collier, rector of Langford Magna, near Sarum. He published a book in 1713, which he calls "Clavis Universalis; or, a new Inquiry after Truth;" being a demonstration of the non-existence or impossibility of an external world. His arguments are the same in substance with Berkeley's; and he appears to understand the whole strength of his cause. Though he is not deficient in metaphysical acuteness, his style is disagreeable, being full of conceits, of new coined words, scholastic terms, and perplexed sentences. He appears to be well acquainted with Des Cartes, Malebranche, and Norris, as well as with Aristotle and the schoolmen: but, what is very strange, it does not appear that he had ever heard of Locke's Essay, which had been published twenty-four years, or of Berkeley's "Principles of Knowledge," which had been published three years.

He says, he had been ten years firmly convinced of the non-existence of an external world, before he ventured to publish his book. He is far from thinking as Berkeley does, that the vulgar are of his opinion. If his book should make any converts to his system, (of which he expresses little hope, though he has supported it by nine demonstrations,) he takes pains to show that his disciples, notwithstanding their opinion, may, with the unenlightened, speak of material things in the common style. He himself had scruples of conscience about this for some time; and if he had not got over them, he must have shut his lips for ever: but he considered, that God himself has used this style in speaking to men in the Holy Scripture, and has thereby sanctified it to all the faithful; and that to the pure all things are pure. He thinks his opinion may be of great use, especially in religion;

and applies it in particular, to put an end to the controversy about Christ's presence in the sacrament.

I have taken the liberty to give this short account of Collier's book, because I believe it is rare, and little known. I have only seen one copy of it, which is in the University library of Glasgow.

QUESTIONS FOR EXAMINATION.

Objection and answer to Malebranche's argument for the existence of an external world?

What advantages does Berkeley propose by his system?

In his theory of vision how does he speak of the material world?

Important observation relative to vision first made by Berkeley, and how far correct?

Fundamental principle of the Berkeleian philosophy?

In his judgment truth divided between the vulgar and the philosophers?

How does he reconcile his sentiments with those of the vulgar?

Objection advanced against the opinion "that objects do not exist when they are not perceived, unless in some other mind?"

Answer?

Atheism completely extinguished by the system of Berkeley?

Which are the most uncomfortable consequences of his theory?

Berkeley an Egoist?

Did the Peripatetics doubt the existence of an external world?

Who amongst modern philosophers laid the foundation of universal doubt?

Des Cartes advances two arguments for the existence of an external world?

Locke seems to have anticipated the theory of Berkeley?

CHAPTER XI.

BISHOP BERKELEY'S SENTIMENTS OF THE NATURE OF IDEAS

I. *Berkeley's theory of ideas deviates from the common opinion.*—I pass over the sentiments of Bishop Berkeley, with respect to abstract ideas, and with respect to space and time, as things which may more properly be considered in another place. But I must take notice of one part of his system, *wherein he seems to have deviated from the common opinion about ideas.*

[Though he sets out in his "Principles of Knowledge" by telling us, that it is evident the objects of human knowledge are ideas, and builds his whole system upon this principle; yet, in the progress of it, he finds that there are certain objects of human knowledge *that are not ideas*, but things which have a permanent existence. The objects of knowledge, of which we have no ideas, are our own minds, and their various operations, other finite minds, and the Supreme Mind.] [The reason why there can be no ideas of spirits and their operations, the author informs us is this—that ideas are passive, inert, unthinking beings; they cannot therefore be the image or likeness of things that have thought, and will, and active power; we have *notions*

of minds, and of their operations, but not ideas.] *We know what we mean* by thinking, willing, and perceiving; we can reason about beings endowed with those powers, but we have no ideas of them. [A spirit or mind is the only substance or support wherein the unthinking beings or ideas can exist; but that this substance which supports or perceives ideas, should itself be an idea, or like an idea, is evidently absurd.]

He observes further, (Princip. sect. 142,) that ["all *relations* including an act of the mind, we cannot properly be said to have an idea, but rather a notion of the relations or habitudes between things. But if, in the modern way, the word idea is extended to spirits, and relations, and acts, this is, after all, an affair of verbal concern; yet it conduces to clearness and propriety, that we distinguish things very different by different names."]*

II. *Certain objects of knowledge do not admit of ideas.*—This is an important part of Berkeley's system, and deserves attention. [We are led by it to divide the objects of human knowledge into two kinds: the first is ideas, which we have by our five senses; they have no existence when they are not perceived, and exist only in the minds of those who perceive them. The second kind of objects comprehends *spirits*, their *acts*, and the *relations* and habitudes of things. Of these we have *notions*, but no ideas.] No idea can represent them, or have any similitude to them; yet we understand what they mean, and we can speak with understanding, and reason about them, without ideas.

III. *This theory different from Locke's, in three respects.*—[This account of ideas is very different from that which Locke has given. (1) In his system, we have no knowledge where we have no ideas. Every thought must have an idea for its immediate object. In Berkeley's, the most important objects are known without ideas. In Locke's system, (2) there are two sources of our ideas, sensation and reflection. In Berkeley's, sensation is the only source, because of the objects of reflection there can be no ideas. We know them without ideas. (3) Locke divides our ideas into those of substances, modes, and relations. In Berkeley's system, there are no ideas of substances or of relations, but notions only. And even in the class of modes, the operations of our own minds are things of which we have distinct notions; but no ideas.

We ought to do the justice to Malebranche to acknowledge, that in this point, as well as in many others, his system comes nearer to Berkeley's than the latter seems willing to own. That author tells us, that there are four different ways in which we come to the knowledge of things. To know things by their ideas, is only one of the four. He affirms, that we have no

* Vide sect. viii. pp. 133, 4.

idea of our own mind, or any of its modifications: that we know these things by consciousness, without ideas. Whether these two acute philosophers foresaw the consequences that may be drawn from the system of ideas, taken in its full extent, and which were afterwards drawn by Mr. Hume, I cannot pretend to say. If they did, their regard to religion was too great to permit them to admit those consequences, or the principles with which they were necessarily connected.

IV. *The arguments in support of his division can be retorted.*—[However this may be, if there be so many things that may be apprehended and known without ideas, this very naturally suggests a scruple with regard to those that are left. For it may be said, If we can apprehend and reason about the world of spirits without ideas, is it not possible that we may apprehend and reason about a material world, without ideas?] If consciousness and reflection furnish us with notions of spirits, and of their attributes, without ideas, may not our senses furnish us with notions of bodies and their attributes, without ideas?

V. *Objection anticipated.*—Berkeley foresaw this objection* to his system, and puts it in the mouth of Hylas, in the following words: (Dial. 3:) Hylas. "If you can conceive the mind of God, without having an idea of it, why may not I be allowed to conceive the existence of matter, notwithstanding that I have no idea of it?" The answer of Philonous is, [(1) "You neither perceive matter *objectively*, as you do an inactive being or idea, (2) nor know it, as you do yourself, by *a reflex act*. (3) neither do you immediately *apprehend it* by *similitude* of the one or the other,† nor (4) yet collect it by *reasoning* from that which you know immediately. All which makes the case of matter widely different from that of the Deity."]

[Though Hylas declares himself satisfied with this answer, I confess I am not; because, if I may trust the faculties that God has given me, I do perceive matter *objectively*, that is, something which is extended and solid, which may be measured and weighed, is the immediate object of my touch and sight.] And this object I take to be matter, and not an idea. And though I have been taught by philosophers that what I immediately touch is an idea, and not matter, yet I have never been able to discover this by the most accurate attention to my own perceptions.

It were to be wished that this ingenious author had explained what he means by ideas, as distinguished from notions. The word notion, being a word in common language, is well understood. All men mean by it the conception, the apprehension, or thought which we have of any object of thought. A notion, therefore, is an act of the mind conceiving or thinking of some

* An *argumentum ad hominem*.

† As you do other minds.

object. The object of thought may be either something that is in the mind, or something that is not in the mind. It may be something that has no existence, or something that did, or does, or shall exist. But the notion which I have of that object is an act of my mind which really exists while I think of the object, but has no existence when I do not think of it. The word idea, in popular language, has precisely the same meaning as the word notion. But philosophers have another meaning to the word idea; and what that meaning is, I think, is very difficult to say.

☞ The whole of Bishop Berkeley's system depends upon the distinction between notions and ideas; and therefore it is worth while to find, if we are able, what those things are which he calls ideas, as distinguished from notions.

For this purpose, we may observe, that he takes notice of two kinds of ideas, the ideas of sense, and the ideas of imagination. "The ideas imprinted on the senses by the Author of nature," he says, "are called real things; and those excited in the imagination being less regular, vivid, and constant, are more properly termed ideas, or images of things, which they copy and represent. But then our sensations, be they never so vivid and distinct, are nevertheless ideas; that is, they exist in the mind, or are perceived by it as truly as the ideas of its own framing. The ideas of sense are allowed to have more reality in them; that is, to be more strong, orderly, and coherent, than the creatures of the mind. They are also less dependent on the spirit, or thinking substance which perceives them, in that they are excited by the will of another and more powerful spirit; yet still they are ideas; and certainly no idea, whether faint or strong, can exist otherwise than in a mind perceiving it."—Princip. sect. 33.

VI. *Ideas of sense.*—From this passage we see that, by the ideas of sense, the author means *sensations:* and this indeed is evident from many other passages, of which I shall mention a few. (Princip. sect. 5.) "Light and colours, heat and cold, extension and figure, in a word, the things we see and feel, what are they but so many sensations, notions, ideas, or impressions on the sense; and is it possible to separate, even in thought, any of these from perception? For my part, I might as easily divide a thing from itself." (Sect. 18.) "As for our senses, by them we have the knowledge only of our *sensations*, ideas, or those things that are immediately perceived by sense; call them what you will. But they do not inform us that things exist without the mind, or unperceived, like to those which are perceived." (Sect. 25.) "All our ideas, sensations, or the things which we perceive, by whatever names they may be distinguished, are visibly inactive: there is nothing of power or agency included in them."

This, therefore, appears certain, that by the ideas of sense, the author meant the sensations we have by means of our senses.

I have endeavoured to explain the meaning of the word *sensation*, Essay I. chap. i., and refer to the explication there given of it, which appears to me to be perfectly agreeable to the sense in which Bishop Berkeley uses it.

As there can be no notion or thought but in a thinking being; so there can be no sensation but in a sentient being. It is the act, or feeling of a sentient being; its very essence consists in its being felt. Nothing can resemble a sensation, but a similar sensation in the same, or in some other mind. To think that any quality in a thing that is inanimate can resemble a sensation, is a great absurdity. In all this, I cannot but agree perfectly with Bishop Berkeley; and I think his notions of sensation much more distinct and accurate than Locke's, who thought that the primary qualities of body are resemblances of our sensations, but that the secondary are not.

That we have many sensations by means of our external senses, there can be no doubt; and if he is pleased to call those ideas, there ought to be no dispute about the meaning of a word. But, says Bishop Berkeley, by our senses, we have the knowledge *only* of our sensations, or ideas, call them which you will. I allow him to call them which he will; but I would have the word *only*, in this sentence to be well weighed, because a great deal depends upon it.

For if it be true, that, by our senses, we have the knowledge of our sensations only, then his system must be admitted, and the existence of a material world must be given up as a dream. No demonstration can be more invincible than this. [If we have any knowledge of a material world, it must be by the senses: but, by the senses we have no knowledge but of our sensations *only*; and our sensations have no resemblance of any thing that can be in a material world.] The only proposition in this demonstration which admits of doubt is, that, by our senses, we have the knowledge of our sensations only, and of nothing else. If there are objects of the senses which are not sensations, his arguments do not touch them; they may be things which do not exist in the mind, as all sensations do; they may be things of which, by our senses, we have notions, though no ideas; just as, by consciousness and reflection, we have notions of spirits, and of their operations, without ideas or sensations.

Shall we say, then, that, by our senses, we have the knowledge of our sensations only, and that they give us no notion of any thing but of our sensations? Perhaps this has been the doctrine of philosophers, and not of Bishop Berkeley alone, otherwise he would have supported it by arguments. Mr. Locke calls all the notions we have by our senses ideas of sensation; and in this has been very generally followed. Hence it seems a very natural inference, that ideas of sensation are sensations. But

philosophers may err: let us hear the dictates of common sense upon this point.

Suppose I am pricked with a pin, I ask, Is the pain I feel, a sensation? Undoubtedly it is. There can be nothing that resembles pain in any inanimate being. But I ask again, Is the pin a sensation? To this question I find myself under a necessity of answering, That the pin is not a sensation, nor can have the least resemblance to any sensation. The pin has length and thickness, and figure and weight. A sensation can have none of those qualities. I am not more certain that the pain I feel is a sensation, than that the pin is not a sensation; yet the pin is an object of sense; and I am as certain that I perceive its figure and hardness by my senses, as that I feel pain when pricked by it.

Having said so much of the ideas of sense in Berkeley's system, we are next to consider the account he gives of the ideas of imagination. Of these he says, (Princip. sect. 28,) "I find I can excite ideas in my mind at pleasure, and vary and shift the scene as oft as I think fit. It is no more than willing; and straightway this or that idea arises in my fancy; and by the same power it is obliterated, and makes way for another. This making and unmaking of ideas, doth very properly denominate the mind active. This much is certain, and grounded on experience. Our sensations," he says, "are called real things; the ideas of imagination are more properly termed ideas, or images of things;" that is, as I apprehend, they are the images of our sensations. It might surely be expected, that we should be well acquainted with the ideas of imagination, as they are of our making; yet, after all the bishop has said about them, I am at a loss to know what they are.

I would observe, in the *first* place, with regard to these ideas of imagination, that they are not sensations; for surely sensation is the work of the senses, and not of imagination; and though pain be a sensation, the thought of pain, when I am not pained, is no sensation.

I observe, in the *second* place, that [I can find no distinction between ideas of imagination and notions, which the author says are not ideas.] I can easily distinguish between a notion and a sensation. It is one thing to say I have the sensation of pain. It is another thing to say I have a notion of pain. The last expression signifies no more than that I understand what is meant by the word *pain*. The first signifies that I really feel pain. But I can find no distinction between the notion of pain, and the imagination of it, or indeed between the notion of anything else, and the imagination of it. I can therefore give no account of the distinction which Berkeley makes between ideas of imagination, and notions, which he says are not ideas. They seem to me perfectly to coincide.

VII. *Hume derived his absurd theory from Berkeley.*—[He seems indeed to say, that the ideas of imagination differ not in kind from those of the senses, but only in the degree of their regularity, vivacity, and constancy. "They are," says he, "less regular, vivid and constant." This doctrine was afterwards greedily embraced by Mr. Hume, and makes a main pillar of his system; but it cannot be reconciled to common sense, to which Bishop Berkeley professes a great regard.] ☞ For, according to this doctrine, if we compare the state of a man racked with the gout, with his state, when being at perfect ease, he relates what he has suffered; the difference of these two states is only this, that, in the last, the pain is less regular, vivid, and constant, than in the first. We cannot possibly assent to this. Every man knows that he can relate the pain he suffered, not only without pain, but with pleasure; and that to suffer pain, and to think of it, are things which totally differ in kind, and not in degree only.

VIII. *Argumentum ad hominem against Berkeley's distinction of ideas, imaginations, and notions.*—We see, therefore, upon the whole, that according to this system, of the most important objects of knowledge, that is, of spirits, of their operations, and of the relations of things, we have no ideas at all; we have notions of them, but not ideas; the ideas we have are those of sense and those of imagination. The first are the sensations we have by means of our senses, whose existence no man can deny, because he is conscious of them; and whose nature hath been explained by this author with great accuracy. As to the ideas of imagination, he hath left us much in the dark: he makes them *images of our sensations,* though, according to his own doctrine, nothing can resemble a sensation but a sensation. [He seems to think, that they differ from sensations only in the degree of their regularity, vivacity, and constancy. But this cannot be reconciled to the experience of mankind; and besides this mark, which cannot be admitted, he hath given us no other mark by which they may be distinguished from notions.] [Nay, it may be observed, that the very reason he gives why we can have no ideas of the acts of the mind about its ideas, nor of the relations of things, is applicable to what he calls ideas of imagination.] (Princip. sect. 142.) "We may not, I think, strictly be said to have an idea of an active being, or of an action, although we may be said to have a notion of them. I have some knowledge or notion of my mind, and its acts about ideas, inasmuch as I know or understand what is meant by these words. It is also to be remarked, that all relations including an act of the mind, we cannot so properly be said to have an idea, but rather a notion of the relations and habitudes between things." From this it follows, that our imaginations are not properly ideas, but notions, *because they include an act of the mind.* For he tells us, in a passage already quoted, that they are creatures of the mind,

of its own framing, and that it makes and unmakes them as it thinks fit, and from this is properly denominated active. [If it be a good reason why we have not ideas, but notions only of relations, because they include an act of the mind; the same reason must lead us to conclude, that our imaginations are notions and not ideas, since they are made and unmade by the mind as it thinks fit, and from this it is properly denominated active.]

IX. When so much has been written, and so many disputes raised about ideas, it were desirable that we knew what they are, and to what category or class of beings they belong. In this we might expect satisfaction in the writings of Bishop Berkeley, if anywhere, considering his known accuracy and precision in the use of words; and it is for this reason that I have taken so much pains to find out what he took them to be.

After all, if I understand what he calls the ideas of sense,* they are the sensations which we have by means of our five senses; but they are, he says, less properly termed ideas.

I understand likewise what he calls notions, but they, says he, are very different from ideas, though, in the modern way, often called by that name.

The ideas of imagination remain, which are most properly termed ideas, as he says; and, with regard to these, I am still very much in the dark. When I imagine a lion or an elephant, the lion or elephant is the object imagined. The act of the mind, in conceiving that object, is the notion, the conception, or imagination of the object. If besides the object, and the act of the mind about it, there be something called the idea of the object, I know not what it is.

If we consult other authors who have treated of ideas, we shall find as little satisfaction with regard to the meaning of this philosophical term. The vulgar have adopted it; but they only [illegible] by it the notion or conception we have of any object, especially our more abstract or general notions. When it is thus put to signify the operation of the mind about objects, whether in conceiving, remembering, or perceiving, it is well understood. But philosophers will have ideas to be the objects of the mind's operations, and not the operations themselves. There is, indeed, great variety of objects of thought. We can think of minds, and of their operations, of bodies, and of their qualities and relations.* If ideas are not comprehended under any of these classes, I am at a loss to comprehend what they are.

X. [In ancient philosophy, ideas were said to be immaterial forms, which, according to one system, *existed from all eternity*,† and, according to another, are *sent forth from the objects*,‡ whose form they are. In *modern* philosophy, they are things in the mind, which are the immediate objects of all our thoughts, and

* Vide sect. vi. of this Chapter, p. 130. † Platonic. ‡ Peripatetic.

which *have no existence when we do not think of them.*] They are called the images, the resemblances, the representatives of external objects of sense; yet they have neither colour, nor smell, nor figure, nor motion, nor any sensible quality. I revere the authority of philosophers, especially where they are so unanimous; but until I can comprehend what they mean by ideas, I must think and speak with the vulgar.

In sensation, properly so called, I can distinguish *two* things, the mind or sentient being, and the sensation. Whether the last is to be called a feeling or an operation, I dispute not; but it has no object distinct from the sensation itself. If in sensation there be a third thing, called an idea, I know not what it is.

In perception, in remembrance, and in conception, or imagination, I distinguish *three* things—the mind that operates, the operation of the mind, and the object of that operation. That the object perceived is one thing, and the perception of that object another, I am as certain as I can be of any thing. The same may be said of conception, of remembrance, of love and hatred, of desire and aversion. In all these, the act of the mind about its object is one thing, the object is another thing. There must be an object, real or imaginary, distinct from the operation of the mind about it. Now, if in these operations the idea be a fourth thing different from the three I have mentioned, I know not what it is, nor have been able to learn from all that has been written about ideas. And if the doctrine of philosophers about ideas confounds any two of these things, which I have mentioned as distinct; if, for example, it confounds the object perceived with the perception of that object, and represents them as one and the same thing, such doctrine is altogether repugnant to all that I am able to discover of the operations of my own mind; and it is repugnant to the common sense of mankind, expressed in the structure of all languages.

QUESTIONS FOR EXAMINATION.

How does Berkeley's theory of ideas differ from the vulgar opinion?

No ideas of spirits?

What objects of knowledge do not admit of *ideas?*

The objects of knowledge are twofold, according to Berkeley?

Locke's account and division of our ideas completely different from Berkeley's?

How may the division of the latter be retorted against his own system?

Berkeley's defence, and Reid's refutation?

What does Berkeley understand by ideas of sense?

In what respect does Reid differ from Berkeley as to knowledge acquired by the senses?

To what proposition can Berkeley's argument against an external world be reduced?

What opinion of Berkeley's laid the foundation of the system of Hume?

Berkeley's distinction between notions and ideas of imagination destroyed by an *argumentum ad hominem?*

CHAPTER XII.

OF THE SENTIMENTS OF MR HUME

I. *Distinction between impressions and ideas.*—Two volumes of the "Treatise of Human Nature" were published in 1739, and the third in 1740. The doctrine contained in this treatise was published anew in a more popular form in Mr. Hume's "Philosophical Essays," of which there have been various editions. [What other authors, from the time of Des Cartes, had called *ideas*, this author distinguished into two kinds, to wit, *impressions* and *ideas*; comprehending under the first, all our sensations, passions, and emotions; and under the last, the faint images of these, when we *remember* or *imagine* them.]

He sets out with this, as a principle that needed no proof, and of which therefore he offers none, that all the perceptions of the human mind resolve themselves into these two kinds, *impressions* and *ideas*.

As this proposition is the foundation upon which the whole of Mr. Hume's system rests, and from which it is raised with great acuteness, indeed, and ingenuity, it were to be wished that he had told us upon what authority this fundamental proposition rests. But we are left to guess, whether it is held forth as a first principle, which has its evidence in itself; or whether it is to be received upon the authority of philosophers.

II. *Berkeley's reason for denying that we have ideas of spirits.*—Mr. Locke had taught us, that all the immediate objects of human knowledge are ideas in the mind. Bishop Berkeley, proceeding upon this foundation, demonstrated very easily, that there is no material world. And he thought, that, for the purposes both of philosophy and religion, we should find no loss, but great benefit, in the want of it. But the bishop, as became his order, was unwilling to give up the world of spirits. He saw very well, that ideas are as unfit to represent spirits as they are to represent bodies. [Perhaps he saw, that if we perceive only the ideas of spirits, we shall find the same difficulty in inferring their real existence from the existence of their ideas, as we find in inferring the existence of matter from the idea of it; and therefore, while he gives up the material world in favour of the system of ideas, he gives up one half of that system in favour of the world of spirits; and maintains, that we can, without ideas, think, and speak, and reason, intelligibly about spirits, and what belongs to them.]

III. *Body and mind according to Hume.*—Mr. Hume shows

no such partiality in favour of the world of spirits. He adopts the theory of ideas in its full extent; and, in consequence, shows that there is neither matter nor mind in the universe; nothing but impressions and ideas. [What we call a *body*, is only a bundle of sensations; and what we call the *mind*, is only a bundle of thoughts, passions, and emotions, *without any subject*.]

Some ages hence, it will perhaps be looked upon as a curious anecdote, that two philosophers of the eighteenth century, of very distinguished rank, were led by a philosophical hypothesis; one, to disbelieve the existence of matter; and the other, to disbelieve the existence both of matter and of mind. Such an anecdote may not be uninstructive, if it prove a warning to philosophers to beware of hypotheses, especially when they lead to conclusions which contradict the principles, upon which all men of common sense must act in common life.

IV. *Hume differs from the Egoists.*—[The Egoists, whom we mentioned before, were left far behind by Mr. Hume; for they believed their own existence, and perhaps also the existence of a Deity. But Mr. Hume's system does not even leave him a *self* to claim the property of his impressions and ideas.]

A system of consequences, however absurd, acutely and justly drawn from a few principles, in very abstract matters, is of real utility in science, and may be made subservient to real knowledge. This merit Mr. Hume's metaphysical writings have in a great degree.

We had occasion before to observe, that, since the time of Des Cartes, philosophers, in treating of the powers of the mind, have in many instances confounded things, which the common sense of mankind has always led them to distinguish, and which have different names in all languages. Thus, in the perception of an external object, all languages distinguish three things, the *mind* that perceives, the operation of that mind, which is called *perception*, and the *object* perceived. Nothing appears more evident to a mind untutored by philosophy, than that these three are distinct things, which, though related, ought never to be confounded. The structure of all languages supposes this distinction, and is built upon it. Philosophers have introduced a fourth thing in this process, which they call the *idea* of the object, which is supposed to be an image, or representative of the object, and is said to be the immediate object. The vulgar know nothing about this idea; it is a creature of philosophy, introduced to account for, and explain, the manner of our perceiving external objects.

It is pleasant to observe, that while philosophers, for more than a century, have been labouring, by means of ideas, to explain perception, and the other operations of the mind, those ideas have by degrees usurped the place of perception, object,

and even of the mind itself, and have supplanted those very things they were brought to explain. Des Cartes reduced all the operations of the understanding to perception; and what can be more natural to those who believe that they are only different modes of perceiving ideas in our own minds. Locke confounds ideas sometimes with the perception of an external object, sometimes with the external object itself. In Berkeley's system, the idea is the only object, and yet is often confounded with the perception of it. But in Hume's, the idea or the impression, which is only a more lively idea, is mind, perception, and object, all in one: so that, by the term perception in Mr. Hume's system, we must understand the mind itself, all its operations, both of understanding and will, and all the objects of these operations. Perception taken in this sense he divides into our more lively perceptions, which he calls *impressions*, and the less lively, which he calls *ideas*. To prevent repetition, I must here refer the reader to some remarks made upon this division, Essay I. chap. i., in the explication there given of the words *perceive, object, impression.*

Philosophers have differed very much with regard to the origin of our ideas, or the sources whence they are derived. The Peripatetics held, that all knowledge is derived originally from the senses; and this ancient doctrine seems to be revived by some late French philosophers, and by Dr. Hartley and Dr. Priestley among the British. Des Cartes maintained, that many of our ideas are innate. Locke opposed the doctrine of innate ideas with much zeal, and employs the whole first book of his Essay against it. But he admits two different sources of ideas; the operations of our external senses, which he calls *sensation*, by which we get all our ideas of body, and its attributes; and *reflection* upon the operations of our minds, by which we get the ideas of every thing belonging to the mind. The main design of the second book of Locke's Essay, is to show, that all our simple ideas, without exception, are derived from the one or the other, or both of these sources. In doing this, the author is led into some paradoxes, although, in general, he is not fond of paradoxes: and had he foreseen all the consequences that may be drawn from his account of the origin of our ideas, he would probably have examined it more carefully.

V. *Hume and Locke agree as to the origin, but disagree as to the consequences of our ideas.* — [Mr. Hume adopts Locke's account of the origin of our ideas, and *from that principle infers*, that we have no idea of substance corporeal or spiritual, no idea of power, no other idea of a cause, but that it is something antecedent, and constantly conjoined to that which we call its effect; and, in a word, that we can have no idea of any thing but our sensations, and the operations of mind we are conscious of.]

VI. *Hume's opinion, "that the mind is inert," consistent with his general theory.*—[This author leaves no power to the mind in framing its ideas and impressions; and no wonder, since he holds that we have no idea of *power;* and the mind is nothing but that succession of impressions and ideas of which we are intimately conscious.]

He thinks, therefore, that our impressions arise from unknown causes, and that the impressions are the causes of their corresponding ideas. By this he means no more but that they always go before the ideas; for this is all that is necessary to constitute the relation of cause and effect.

VII. *This division of the laws of association, &c. logically defective.*—[As to the order and succession of our ideas, he holds it to be determined by *three laws* of attraction or association, which he takes to be original properties of the ideas, by which they attract, as it were, or associate themselves with other ideas which either *resemble* them, or which have been *contiguous* to them in time and place, or to which they have the relations of *cause and effect.*

We may here observe, by the way, that the last of these three laws seems to be included in the second, since causation, according to him, implies no more than contiguity in time and place.]

It is not my design at present to show how Mr. Hume, upon the principles he has borrowed from Locke and Berkeley, has, with great acuteness, reared a system of absolute scepticism, which leaves no rational ground to believe any one proposition, rather than its contrary: my intention in this place being only to give a detail of the sentiments of philosophers concerning ideas since they became an object of speculation, and concerning the manner of our perceiving external objects by their means.

QUESTIONS FOR EXAMINATION

Ideas and impressions different?

Why does Berkeley deny that we have ideas of spirits?

Hume's description of body and mind?

Hume exceeds the Egoists in disbelief and extravagance?

How far do Hume and Locke agree, how far do they disagree?

The mind inert, according to Hume, which opinion is consistent with his system?

Association of ideas how governed or regulated, in Hume's system?

This grand division labours under a logical defect?

CHAPTER XIII.

OF THE SENTIMENTS OF ANTONY ARNAULD.

I. In this sketch of the opinions of philosophers concerning ideas, we must not omit Antony Arnauld, doctor of the Sorbonne, who, in the year 1683, published his book of "True and False Ideas," in opposition to the system of Malebranche, before mentioned. It is only about ten years since I could find this book, and I believe it is rare.

Though Arnauld wrote before Locke, Berkeley, and Hume, I have reserved to the last place some account of his sentiments, because it seems difficult to determine whether he adopted the common theory of ideas, or whether he is singular in rejecting it altogether as a fiction of philosophers.

The controversy between Malebranche and Arnauld necessarily led them to consider what kind of things ideas are, a point upon which other philosophers had very generally been silent. Both of them professed the doctrine universally received, that we perceive not material things immediately, that it is their ideas that are the immediate objects of our thought, and that it is in the idea of every thing that we perceive its properties.

It is necessary to premise, that both these authors use the word *perception*, as Des Cartes had done before them, to signify every operation of the understanding. "To think, to know, to perceive, are the same thing," says Mr. Arnauld, chap. v. def. 2. It is likewise to be observed, that *the various operations of the mind are by both called modifications of the mind.* Perhaps they were led into this phrase by the Cartesian doctrine, that the essence of the mind consists in thinking, as that of body consists in extension. I apprehend, therefore, that when they make sensation, perception, memory, and imagination, to be various modifications of the mind, they mean no more, but that these are things which can only exist in the mind as their subject. We express the same thing, by calling them various modes of thinking, or various operations of the mind.

II. *Malebranche's division of external objects.*—The things which the mind perceives, says Malebranche, are of two kinds. They are either in the mind itself, or they are external to it. The things in the mind, are all its different modifications, its sensations, its imaginations, its pure intellections, its passions and affections. These are immediately perceived; we are conscious of them, and *have no need* of ideas to represent them to us.

Things external to the mind are either corporeal or spiritual. With regard to the last, he thinks it possible, that, in another state, spirits may be an immediate object of our understandings,

and so be perceived without ideas; that there may be such an union of spirits as that they may immediately perceive each other, and communicate their thoughts mutually, without signs and without ideas.]

But leaving this as a problematical point, he holds it to be undeniable, that *material* things cannot be perceived immediately, but only by the mediation of ideas. He thought it likewise undeniable, that the idea must be immediately present to the mind, that it must touch the soul, as it were, and modify its perception of the object.

From these principles we must necessarily conclude, either that ☞ the idea is some modification of the human mind, or that it must be an idea in the Divine Mind, which is always intimately present with our minds. The matter being brought to this alternative, Malebranche considers first, all the possible ways such a modification may be produced in our mind as that we call an idea of a material object, taking it for granted always, that it must be an object perceived, and something different from the act of the mind in perceiving it. He finds insuperable objections against every hypothesis of such ideas being produced in our minds, and therefore concludes, that the immediate objects of perception are the ideas of the Divine Mind.

III. *Theory of Arnauld.*—[Against this system Arnauld wrote his book of "True and False Ideas." He does not object to the alternative mentioned by Malebranche; but he maintains, that ideas are *modifications of our minds.*] And finding no other modification of the human mind which can be called the idea of an external object, he says it is only another word for perception. (Chap. v. def. 3.) "I take the idea of an object, and the perception of an object, to be the same thing. I do not say whether there may be other things to which the name of idea may be given. But it is certain that there are ideas taken in this sense, and that these ideas are either attributes or modifications of our minds."

This, I think, indeed, was to attack the system of Malebranche upon its weak side, and where, at the same time, an attack was least expected. Philosophers had been so unanimous in maintaining that we do not perceive external objects immediately, but by certain representative images of them called *ideas*, that Malebranche might well think his system secure upon that quarter, and that the only question to be determined was, in what subject those ideas are placed, whether in the human or in the Divine Mind?

But, says Mr. Arnauld, those ideas are mere chimeras, fictions of philosophers; there are no such beings in nature; and therefore it is to no purpose to inquire whether they are in the Divine or in the human mind. The only true and real ideas are

our perceptions, which are acknowledged by all philosophers, and Malebranche himself, to be acts or modifications of our own minds. He does not say that the fictitious ideas were a fiction of Malebranche. He acknowledges, that they had been very generally maintained by the scholastic philosophers, and points out, very judiciously, the prejudices that had led them into the belief of such ideas.

IV. *Philosophers were drawn into their theory of ideas by certain prejudices.*—[Of all the powers of our mind, the external senses are thought to be the best understood, and their objects are the most familiar. Hence we measure other powers by them, and transfer to other powers the language which properly belongs to them. *The objects of sense must be present to the sense*, or *within its sphere, in order to their being perceived.* Hence, (1) by analogy, we are led to say of every thing when we think of it, that it is present to the mind, or in the mind. But this presence is metaphorical, or analogical only; and Arnauld calls it objective presence, to distinguish it from that local presence which is required in objects that are perceived by sense. But both being called by the same name, they are confounded together, and those things that belong only to real or local presence, are attributed to the metaphorical.]

[(2) We are likewise accustomed to see objects by their images in a mirror, or in water: and hence are led, by analogy, to think that objects may be presented to the *memory* or imagination, in some similar manner, by images, which philosophers have called *ideas*.]

☞ By such *prejudices* and *analogies*, Arnauld conceives, men have been led to believe, that the objects of memory and imagination must be presented to the mind by images or ideas; and the philosophers have been more carried away by these prejudices than even the vulgar, because the use made of this theory was to explain and account for the various operations of the mind, a matter in which the vulgar take no concern.

He thinks, however, that Des Cartes had got the better of these prejudices, and that he uses the word idea as signifying the same thing with perception, and is therefore surprised that a disciple of Des Cartes, and one who was so great an admirer of him as Malebranche was, should be carried away by them. It is strange, indeed, that the two most eminent disciples of Des Cartes, and his contemporaries, should differ so essentially with regard to his doctrine concerning ideas.

I shall not attempt to give the reader an account of the continuation of this controversy between those two acute philosophers, in the subsequent defences and replies: because I have not access to see them. After much reasoning, and some animosity, each continued in his own opinion, and left his antagonist

where he found him. Malebranche's opinion of our seeing all things in God, soon died away of itself; and Arnauld's notion of ideas seems to have been less regarded than it deserved, by the philosophers that came after him; perhaps for this reason, among others, that it seemed to be in some sort given up by himself, in his attempting to reconcile it to the common doctrine concerning ideas.

V. From the account I have given, one would be apt to conclude, that Arnauld totally denied the existence of ideas, in the philosophical sense of that word, and that he adopted the notion of the vulgar, who acknowledge no object of perception but the external object. But he seems very unwilling to deviate so far from the common track, and what he had given up with one hand he takes back with the other.

For, *first*, Having defined ideas to be the same thing with perceptions, he adds this qualification to his definition: "I do not here consider whether there are other things that may be called ideas; but it is certain there are ideas taken in this sense." I believe, indeed, there is no philosopher who does not, on some occasions, use the word idea in this popular sense.

Secondly, He supports this popular sense of the word by the authority of Des Cartes, who, in his demonstration of the existence of God from the idea of him in our minds, defines an idea thus: "by the word *idea*, I understand that form of any thought, by the immediate perception of which I am conscious of that thought; so that I can express nothing by words, with understanding, without being certain that there is in my mind the idea of that which is expressed by the words." This definition seems, indeed, to be of the same import with that which is given by Arnauld. But Des Cartes adds a qualification to it, which Arnauld, in quoting it, omits; and which shows, that Des Cartes meant to limit his definition to the idea then treated of, that is, to the idea of the Deity; and that there are other ideas to which this definition does not apply. For he adds: "and thus I give the name of idea, not solely to the images painted in the phantasy. Nay, in this place, I do not at all give the name of ideas to those images, in so far as they are painted in the corporeal phantasy that is in some part of the brain, but only in so far as they inform the mind, turning its attention to that part of the brain."

VI. *Attempt of Arnauld to reconcile his own with the philosophic doctrine.*—*Thirdly*, Arnauld has employed the whole of his sixth chapter, to show that these ways of speaking, common among philosophers, to wit, *that we perceive not things immediately; that it is their ideas that are the immediate objects of our thoughts; that it is in the idea of every thing that we perceive its properties*, are not to be rejected, but are true when rightly

understood. [He labours to reconcile these expressions to his own definition of ideas, by observing, that every perception and every thought is necessarily conscious of itself, and reflects upon itself; and that, by this consciousness and reflection, *it is its own immediate object*. Whence he infers, that the idea, that is, *the perception, is the immediate object of perception.*]

VII. *Its fallacy shown.*—[This looks like a weak attempt to reconcile two inconsistent doctrines, by one who wishes to hold both. It is true, that consciousness always goes along with perception; but they are different operations of the mind, and they have their different objects. Consciousness is not perception, nor is the object of consciousness the object of perception.] The same may be said of every operation of mind that has an object. Thus, injury is the object of resentment. When I resent an injury, I am conscious of my resentment; that is, my resentment is the immediate and the only object of my consciousness; but it would be absurd to infer from this, that my resentment is the immediate object of my resentment.

Upon the whole, if Arnauld, in consequence of his doctrine, that ideas, taken for representative images of external objects, are a mere fiction of the philosophers, had rejected boldly the doctrine of Des Cartes, as well as of the other philosophers, concerning those fictitious beings, and all the ways of speaking that imply their existence, I should have thought him more consistent with himself, and his doctrine concerning ideas more rational and more intelligible than that of any other author of my acquaintance who has treated of the subject.

QUESTIONS FOR EXAMINATION.

Malebranche's division of external objects?

Opinion of Arnauld?

By what prejudices have men been insensibly seduced into the philosophic theory of ideas?

Des Cartes' definition of the term "idea?"

How does Arnauld endeavour to reconcile his own to the philosophic theory, and how is he refuted?

CHAPTER XIV.

REFLECTIONS ON THE COMMON THEORY OF IDEAS.

I. After so long a detail of the sentiments of philosophers, ancient and modern, concerning ideas, it may seem presumptuous to call in question their existence. But no philosophical opinion, however ancient, however generally received, ought to rest upon authority. There is no presumption in requiring evidence for it, or in regulating our belief by the evidence we can find.

To prevent mistakes, the reader must again be reminded, that if by ideas are meant only the acts or operations of our minds in perceiving, remembering, or imagining objects, I am far from calling in question the existence of those acts; we are conscious of them every day, and every hour of life; and I believe no man of a sound mind ever doubted of the real existence of the operations of mind, of which he is conscious. Nor is it to be doubted, that, by the faculties which God has given us, we can conceive things that are absent, as well as perceive those that are within the reach of our senses; and that such conceptions may be more or less distinct, and more or less lively and strong. We have reason to ascribe to the all-knowing and all-perfect Being distinct conceptions of all things existent and possible, and of all their relations; and if these conceptions are called his eternal ideas, there ought to be no dispute among philosophers about a word. The ideas, of whose existence I require the proof, are not the operations of any mind, but supposed objects of those operations. They are not perception, remembrance, or conception, but things that are said to be perceived, or remembered, or imagined.

Nor do I dispute the existence of what the vulgar call the objects of perception. These, by all who acknowledge their existence, are called real things, not ideas. But philosophers maintain, that, besides these, there are immediate objects of perception in the mind itself: that, for instance, we do not see the sun immediately, but an idea; or, as Mr. Hume calls it, an impression, in our own minds. This idea is said to be the image, the resemblance, the representative of the sun, if there be a sun. It is from the existence of the idea that we must infer the existence of the sun. But the idea being immediately perceived, there can be no doubt, as philosophers think, of its existence.

In like manner, when I remember, or when I imagine any thing, all men acknowledge that there must be something that is remembered, or that is imagined; that is, some object of those operations. The object remembered must be something that did exist in time past. The object imagined may be something that never existed. But, say the philosophers, besides these objects which all men acknowledge, there is a more immediate object which really exists in the mind at the same time we remember or imagine. This object is an idea or image of the thing remembered or imagined.

II. *First argument against the theory of ideas.*—The *first* reflection I would make on this philosophical opinion is, That [it is directly contrary to the universal sense of men who have not been instructed in philosophy.] When we see the sun or moon, we have no doubt that the very objects which we im-

mediately see, are very far distant from us, and from one another. We have not the least doubt, that this is the sun and moon which God created some thousands of years ago, and which have continued to perform their revolutions in the heavens ever since. But how are we astonished when the philosopher informs us, that we are mistaken in all this; that the sun and moon which we see, are not, as we imagine, many miles distant from us, and from each other, but that they are in our own mind; that they had no existence before we saw them, and will have none when we cease to perceive and to think of them; because the objects we perceive are only ideas in our own minds, which can have no existence a moment longer than we think of them.

If a plain man, uninstructed in philosophy, has faith to receive these mysteries, how great must be his astonishment. He is brought into a new world, where every thing he sees, tastes, or touches, is an idea; a fleeting kind of being which he can conjure into existence, or can annihilate in the twinkling of an eye.

After his mind is somewhat composed, it will be natural for him to ask his philosophical instructor, Pray, Sir, are there then no substantial and permanent beings called the sun and moon, which continue to exist whether we think of them or not?

Here the philosophers differ. Mr. Locke, and those that were before him, will answer to this question, That it is very true, there are substantial and permanent beings called the sun and moon; but they never appear to us in their own person, but by their representatives, the ideas in our own minds, and we know nothing of them but what we can gather from those ideas.

Bishop Berkeley and Mr. Hume would give a different answer to the question proposed: they would assure the querist, that it is a vulgar error, a mere prejudice of the ignorant and unlearned, to think that there are any permanent and substantial beings called the sun and moon; that the heavenly bodies, our own bodies, and all bodies whatsoever, are nothing but ideas in our minds; and that there can be nothing like the ideas of one mind, but the ideas of another mind. There is nothing in nature but minds and ideas, says the Bishop; nay, says Mr. Hume, there is nothing in nature but ideas only; for what we call a mind is nothing but a train of ideas connected by certain relations between themselves.

In this representation of the theory of ideas, there is nothing exaggerated or misrepresented, as far as I am able to judge; and surely nothing further is necessary to show, that, to the uninstructed in philosophy, it must appear extravagant and visionary, and most contrary to the dictates of common understanding.

There is the less need of any further proof of this, that it is very amply acknowledged by Mr. Hume, in his "Essay on the Academical or Sceptical Philosophy." "It seems evident," says

he, "that men are carried by a natural instinct, or prepossession, to repose faith in their senses; and that without any reasoning, or even almost before the use of reason, we always suppose an external universe, which depends not on our perception, but would exist though we and every sensible creature were absent or annihilated. Even the animal creation are governed by a like opinion, and preserve this belief of external objects in all their thoughts, designs, and actions.

"It seems also evident, that when men follow this blind and powerful instinct of nature, they always suppose the very images presented by the senses to be the external objects, and never entertain any suspicion, that the one are nothing but representations of the other. This very table which we see white, and feel hard, is believed to exist independent of our perception, and to be something external to the mind which perceives it; our presence bestows not being upon it; our absence annihilates it not: it preserves its existence uniform and entire, independent of the situation of intelligent beings who perceive or contemplate it.

"But this universal and primary notion of all men is soon destroyed by the slightest philosophy, which teaches us, that nothing can ever be present to the mind, but in image or perception; and that the senses are only the inlets through which these images are received, without being ever able to produce any immediate intercourse between the mind and the object."

It is therefore acknowledged by this philosopher, to be a natural instinct or prepossession, an universal and primary opinion of all men, a primary instinct of nature, that the objects which we immediately perceive by our senses, are not images in our minds, but external objects, and that their existence is independent of us, and our perception.

[In this acknowledgment, Mr. Hume, indeed, seems to me more generous, and even more ingenuous than Bishop Berkeley, who would persuade us, that his opinion does not oppose the vulgar opinion, but only that of the philosophers; and that the external existence of a material world is a philosophical hypothesis, and not the natural dictate of our perceptive powers.] The Bishop shows a timidity of engaging such an adversary, as a primary and universal opinion of all men. He is rather fond to court its patronage. But the philosopher intrepidly gives a defiance to this antagonist, and seems to glory in a conflict that was worthy of his arm. "Optat aprum aut fulvum descendere monte leonem." After all, I suspect that a philosopher, who wages war with this adversary, will find himself in the same condition as a mathematician who should undertake to demonstrate, that there is no truth in the axioms of mathematics.

III. *Second argument against the theory of ideas.*—[A *second* reflection upon this subject is, That the *authors* who have

treated of ideas, *have generally taken their existence for granted*, as a thing that could not be called in question; and such arguments as they have mentioned incidentally, in order to prove it, seem too weak to support the conclusion.]

Mr. Locke, in the introduction to his Essay, tells us, that he uses the word idea to signify whatever is the immediate object of thought; and then adds, "I presume it will be easily granted me that there are such ideas in men's minds; every one is conscious of them in himself, and men's words and actions will satisfy him that they are in others." I am indeed conscious of perceiving, remembering, imagining; but that the objects of these operations are images in my mind, I am not conscious. I am satisfied by men's words and actions, that they often perceive the same objects which I perceive, which could not be, if those objects were ideas in their own minds.

Mr. Norris* is the only author I have met with, who professedly puts the question, Whether material things can be perceived by us *immediately?* He has offered four arguments to show that they cannot. *First*, "Material objects are without the mind, and therefore there can be no union between the object and the percipient." *Answer*, This argument is lame, until it is shown to be necessary that in perception there should be a union between the object and the percipient. *Second*, "Material objects are disproportioned to the mind, and removed from it by the whole diameter of being." This argument I cannot answer, because I do not understand it. *Third*, "Because, if material objects were immediate objects of perception, there could be no physical science; things necessary and immutable being the only object of science." *Answer*, Although things necessary and immutable be not the immediate objects of perception, they may be immediate objects of other powers of the mind. *Fourth*, "If material things were perceived by themselves, they would be a true light to our minds, as being the intelligible form of our understandings, and consequently perfective of them, and indeed superior to them." If I comprehend any thing of this mysterious argument, it follows from it, that the Deity perceives nothing at all, because nothing can be superior to his understanding, or perfective of it.

IV. *Argument of Samuel Clarke in favour of the existence of ideas.*—There is an argument which is hinted at by Malebranche, and by several other authors, which deserves to be more seriously considered. As I find it most clearly expressed and most fully urged by Dr. Samuel Clarke, I shall give it in his words, in his second reply to Leibnitz, sect. 4, ("The soul, without being present to the images of the things perceived, could not possibly perceive them. A living substance can only there perceive,

* Vide p. 89.

where it is present, either to the things themselves, (as the omnipresent God is to the whole universe,) or to the images of things, as the soul is in its proper *sensorium*."*)

Sir Isaac Newton expresses the same sentiment, but with his usual reserve, in a query only.

The ingenious Dr. Porterfield, in his Essay concerning the motions of our eyes, adopts this opinion with more confidence. His words are: "How body acts upon mind, or mind upon body, I know not; but this I am very certain of, that nothing can act, or be acted upon, where it is not; and therefore, our mind can never perceive any thing but its own proper modifications, and the various states of the sensorium, to which it is present. So that it is not the external sun and moon which are in the heavens, which our mind perceives, but only their image or representation impressed upon the sensorium. How the soul of a seeing man sees these images, or how it receives those ideas, from such agitations in the sensorium, I know not; but I am sure it can never perceive the external bodies themselves, to which it is not present."

These, indeed, are great authorities; but, in matters of philosophy, we must not be guided by authority, but by reason. Dr. Clarke, in the place cited, mentions slightly, as the reason of his opinion, that "nothing can any more act, or be acted upon, when it is not present, than it can be where it is not." And again, in his third reply to Leibnitz, sect. 11, "We are sure the soul cannot perceive what it is not present to, because nothing can act, or be acted upon, where it is not." The same reason we see is urged by Dr. Porterfield.

V. *Its fallacy.*—That nothing can act immediately where it is not, I think, must be admitted; for I agree with Sir Isaac Newton, that power without substance is inconceivable. It is a consequence of this, that nothing can be acted upon immediately where the agent is not present. Let this therefore be granted. [To make the reasoning conclusive, it is further necessary, that, when we perceive objects, *either they act upon us, or we act upon them.* This does not appear self-evident, nor have I ever met with any proof of it. I shall briefly offer the reasons why I think it ought not to be admitted.]

VI. *Why it has been supposed that external objects act on the mind.*—When we say that one being acts upon another, we mean that some power or force is exerted by the agent, which produces, or has a tendency to produce, a change in the thing acted upon. If this be the meaning of the phrase, as I conceive it is, there appears no reason for asserting, that, in perception, either the object acts upon the mind, or the mind upon the object.

* Vide Hume's argument in support of the same theory, p. 151, seq.

An object, in being perceived, does not act at all. ☞ I perceive the walls of the room where I sit; but they are perfectly inactive, and therefore act not upon the mind. [To be perceived, is what logicians call an external denomination, *which implies neither action nor quality in the object perceived.*] [Nor could men ever have gone into this notion, that perception is owing to some action of the object upon the mind, were it not that we are so prone to form our notions of the mind from some similitude we conceive between it and body. *Thought in the mind is conceived to have some analogy to motion in a body;* and as a body is put in motion, by being acted upon by some other body, so we are apt to think the mind is made to perceive, by some impulse it receives from the object.] But reasonings, drawn from such analogies, ought never to be trusted. They are, indeed, the cause of most of our errors with regard to the mind. And we might as well conclude, that minds may be measured by feet and inches, or weighed by ounces and drachms, because bodies have those properties.

I see as little reason, in the second place, to believe, that in perception the mind acts upon the object. To perceive an object is one thing; to act upon it is another. Nor is the last at all included in the first. To say, that I act upon the wall by looking at it, is an abuse of language, and has no meaning. [*Logicians distinguish two kinds of operations of mind;* the first kind produces no effect without the mind; the last does. The first they call *immanent acts;* the second *transitive.* All intellectual operations belong to the first class; they produce no effect upon any external object.]. But without having recourse to logical distinctions, every man of common sense knows, that to think of an object, and to act upon it, are very different things.

As we have, therefore, no evidence, that, in perception, the mind acts upon the object, or the object upon the mind, but strong reasons to the contrary; Dr. Clarke's argument against our perceiving external objects immediately falls to the ground.

This notion, that, in perception, the object must be contiguous to the percipient, seems, with many other prejudices, to be borrowed from analogy. In all the external senses, there must, as has been before observed, be some impression made upon the organ of sense by the object, or by something coming from the object. An impression supposes contiguity. Hence we are led by analogy to conceive something similar in the operations of the mind. Many philosophers resolve almost every operation of mind into impressions and feelings, words manifestly borrowed from the sense of touch. And it is very natural to conceive contiguity necessary between that which makes the impression, and that which receives it; between that which feels, and that which is felt. And though no philosopher will now pretend

to justify such analogical reasoning as this; yet it has a powerful influence upon the judgment, while we contemplate the operations of our minds, only as they appear through the deceitful medium of such analogical notions and expressions.

VII. *The argument of Clarke may be doubly refuted.*—When we lay aside those analogies, and reflect attentively upon our perception of the objects of sense, we must acknowledge that, though we are conscious of perceiving objects, we are altogether ignorant how it is brought about; and know as little how we perceive objects as how we were made. [And if we should admit an image in the mind, or contiguous to it, we know as little how perception may be produced by this image as by the most distant object. Why, therefore, should we be led, by a theory which is (1) neither grounded on evidence, nor, (2) if admitted, can explain any one phenomenon of perception, to reject the natural and immediate dictates of those perceptive powers, to which, in the conduct of life, we find a necessity of yielding implicit submission.

VIII. *Hume adduces an argument deserving of consideration in support of the common theory.*—There remains only one other argument that I have been able to find urged against our perceiving external objects immediately. It is proposed by Mr. Hume, who in the Essay already quoted, after acknowledging that it is a universal and primary opinion of all men, that we perceive external objects immediately, subjoins what follows:

"But this universal and primary opinion of all men is soon destroyed by the slightest philosophy, which teaches us that nothing can ever be present to the mind but an image or perception; and that the senses are only the inlets through which these images are received, without being ever able to produce any immediate intercourse between the mind and the object. [The table, which we see, seems to diminish as we remove farther from it; but the real table, which exists independent of us, suffers no alteration. It was therefore nothing but its image which was present to the mind.] These are the obvious dictates of reason; and no man who reflects, ever doubted that the existences which we consider, when we say *this house*, and *that tree*, are nothing but perceptions in the mind, and fleeting copies and representations of other existences, which remain uniform and independent. So far, then, we are necessitated by reasoning, to depart from the primary instincts of nature, and to embrace a new system with regard to the evidence of our senses."

We have here a remarkable conflict between two contradictory opinions, wherein all mankind are engaged. On the one side stand all the vulgar, who are unpractised in philosophical researches, and guided by the uncorrupted primary instincts of nature. On the other side, stand all the philosophers ancient and modern;

every man without exception who reflects. In this division, to my great humiliation, I find myself classed with the vulgar.

The passage now quoted is all I have found in Mr. Hume's writings upon this point; and indeed there is more reasoning in it than I have found in any other author; I shall therefore examine it minutely.

First, He tells us, That "this universal and primary opinion of all men is soon destroyed by the slightest philosophy, which teaches us, that nothing can ever be present to the mind but an image or perception."

The phrase of being present to the mind has some obscurity; but I conceive he means being an immediate object of thought; an immediate object, for instance, of perception, of memory, or of imagination. If this be the meaning, (and it is the only pertinent one I can think of), there is no more in this passage but an assertion of the proposition to be proved, and an assertion that philosophy teaches it. If this be so, I beg leave to dissent from philosophy till she gives me reason for what she teaches. For though common sense and my external senses demand my assent to their dictates upon their own authority, yet philosophy is not entitled to this privilege. But that I may not dissent from so grave a personage without giving a reason, I give this as the reason of my dissent. I see the sun when he shines; I remember the battle of Culloden; and neither of these objects is an image or perception.

He tells us, in the *next* place, "That the senses are only the inlets through which these images are received."

IX. *Why many modern philosophers have lapsed into the Aristotelian system.*—I know that Aristotle and the schoolmen taught, that images or species flow from objects, and are let in by the senses, and strike upon the mind; but this has been so effectually refuted by Des Cartes, by Malebranche, and many others, that nobody now pretends to defend it. Reasonable men consider it as one of the most unintelligible and unmeaning parts of the ancient system. To what cause is it owing that modern philosophers are so prone to fall back into this hypothesis, as if they really believed it? [For of this proneness I could give many instances besides this of Mr. Hume; and I take the cause to be, that images in the mind, and images let in by the senses, are so nearly allied, and so strictly connected, that they must stand or fall together.] The old system consistently maintained both; but the new system has rejected the doctrine of images let in by the senses, holding, nevertheless, that there are images in the mind; and, having made this unnatural divorce of two doctrines which ought not to be put asunder, that which they have retained often leads them back involuntarily to that which they have rejected.

X. *Absurdities of Hume.*—Mr. Hume surely did not seriously

believe that an image of sound is let in by the ear, an image of smell by the nose, an image of hardness and softness, of solidity and resistance, by the touch. [For, besides the absurdity of the thing, which has often been shown, Mr. Hume, and all modern philosophers maintain that the images which are the immediate objects of perception *have no existence when they are not perceived;* whereas, if they were let in by the senses, they must be, before they are perceived, and have a separate existence.]

He tells us farther, that philosophy teaches, that the senses are unable to produce any immediate intercourse between the mind and the object. Here, I still require the reasons that philosophy gives for this; for, to my apprehension, I immediately perceive external objects, and this I conceive is the immediate intercourse here meant.

Hitherto I see nothing that can be called an argument. Perhaps it was intended only for illustration. The argument, the only argument follows:

The table which we see, seems to diminish as we remove farther from it; but the real table, which exists independent of us, suffers no alteration: it was therefore nothing but its image which was presented to the mind. These are the obvious dictates of reason.

To judge of the strength of this argument, it is necessary to attend to a distinction which is familiar to those who are conversant in the mathematical sciences, I mean the distinction between real and apparent magnitude. The real magnitude of a line is measured by some known measure of length, as inches, feet, or miles: the real magnitude of a surface or solid, by known measures of surface or of capacity. This magnitude is an object of touch only, and not of sight; nor could we even have had any conception of it, without the sense of touch: and Bishop Berkeley, on that account, calls it *tangible magnitude.*

Apparent magnitude is measured by the angle which an object subtends at the eye. Supposing two right lines drawn from the eye to the extremities of the object, making an angle of which the object is the subtense, the apparent magnitude is measured by this angle. This apparent magnitude is an object of sight, and not of touch. Bishop Berkeley calls it *visible magnitude.*

If it is asked, What is the apparent magnitude of the sun's diameter? the answer is, That it is about thirty-one minutes of a degree. But if it is asked, What is the real magnitude of the sun's diameter? the answer must be, So many thousand miles, or so many diameters of the earth. From which it is evident, that real magnitude, and apparent magnitude, are things of a different nature, though the name of magnitude is given to both. The first has three dimensions, the last only two. The first is measured by a line, the last by an angle.

From what has been said, it is evident that the real magni-

tude of a body must continue unchanged, while the body is unchanged. This we grant. But it is likewise evident that the apparent magnitude must continue the same while the body is unchanged. So far otherwise, that every man who knows any thing of mathematics can easily demonstrate, that the same individual object, remaining in the same place, and unchanged, must necessarily vary in its apparent magnitude, according as the point from which it is seen is more or less distant; and that its apparent length or breadth will be nearly in a reciprocal proportion to the distance of the spectator. This is as certain as the principles of geometry.

We must likewise attend to this, that though the real magnitude of a body is not originally an object of sight, but of touch, yet we learn by experience to judge of the real magnitude in many cases by sight. We learn by experience to judge of the distance of a body from the eye within certain limits; and from its distance and apparent magnitude taken together, we learn to judge of its real magnitude.

And this kind of judgment, by being repeated every hour, and almost every minute of our lives, becomes, when we are grown up, so ready and so habitual, that it very much resembles the original perceptions of our senses, and may not improperly be called *acquired perception*.

Whether we call it judgment or acquired perception is a verbal difference. But it is evident, that, by means of it, we often discover by one sense things which are properly and naturally the objects of another. Thus I can say without impropriety, I hear a drum, I hear a great bell, or I hear a small bell; though it is certain that the figure or size of the sounding body is not originally an object of hearing. In like manner, we learn by experience how a body of such a real magnitude, and at such a distance, appears to the eye: but neither its real magnitude, nor its distance from the eye, are *properly objects of sight*, any more than the form of a drum, or the size of a bell, are properly objects of hearing.

XI. *Refutation of the argument advanced in* sect. viii. p. 151. —If these things be considered, it will appear, that Mr. Hume's argument hath no force to support his conclusion, nay, that it leads to a contrary conclusion. [The argument is this, the table we see seems to diminish as we remove farther from it; that is, its apparent magnitude is diminished; but the real table suffers no alteration, to wit, in its real magnitude; therefore it is not the real table we see: I admit both the premises in this syllogism, but I deny the conclusion. The syllogism has what the logicians call two middle terms: *apparent magnitude* is the middle term in the first premise; *real magnitude* in the second. Therefore, according to the rules of logic, the conclusion is not

—, drawn from the premises;] but, laying aside the rules of logic, let us examine it by the light of common sense.

[Let us suppose, for a moment, that it is the real table we see: must not this real table seem to diminish as we remove farther from it? It is demonstrable that it must. How then can this apparent diminution be an argument that it is not the real table? When that which must happen to the real table, as we remove farther from it, does actually happen to the table we see, it is absurd to conclude from this, that it is not the real table we see.] It is evident therefore, that this ingenious author has imposed upon himself by confounding real magnitude with apparent magnitude, and that his argument is a mere sophism.

XII. *The argument may be retorted.*—[I observed that Mr. Hume's argument not only has no strength to support his conclusion, but that it leads to the contrary conclusion; to wit, that it is the real table we see; for this plain reason, that the table we see has precisely that apparent magnitude *which it is demonstrable the real table must have when placed at that distance.*]

[This argument is made much stronger by considering, that the real table may be placed successively at a thousand different distances; and in every distance, in a thousand different positions; and it can be determined demonstratively, by the rules of geometry and perspective, what must be its apparent magnitude, and apparent figure, in each of those distances and positions.] Let the table be placed successively in as many of these different distances, and different positions, as you will, or in them all; open your eyes and you shall see a table precisely of that apparent magnitude, and that apparent figure, which the real table must have in that distance, and in that position. Is not this a strong argument that it is the real table you see?

In a word, the appearance of a visible object is infinitely diversified, according to its distance and position. The visible appearances are innumerable, when we confine ourselves to one object, and they are multiplied according to the variety of objects. Those appearances have been matter of speculation to ingenious men, at least since the time of Euclid. [They have accounted for all this variety, on the supposition, that the objects we see are external, and not in the mind itself.] The rules they have demonstrated about the various projections of the sphere, about the appearances of the planets in their progressions, stations, and retrogradations, and all the rules of perspective, are built on the supposition that the objects of sight are external. They can each of them be tried in thousands of instances. In many arts and professions innumerable trials are daily made; nor were they ever found to fail in a single instance. Shall we say that a false supposition, invented by the rude vulgar, has been so lucky in solving an infinite number of phenomena of nature? This surely would be a greater prodigy than philosophy ever exhibited:

[Add to this, that upon the contrary hypothesis, to wit, that the objects of sight are internal, no account can be given of any one of those appearances, nor any physical cause assigned why a visible object should, in any one case, have one apparent figure and magnitude rather than another.]

Thus I have considered every argument I have found advanced to prove the existence of ideas, or images of external things, in the mind: and if no better arguments can be found, I cannot help thinking, that the whole history of philosophy has never furnished an instance of an opinion so unanimously entertained by philosophers upon so slight grounds.

XIII. *Third argument against the theory of ideas.*—[A *third* reflection I would make upon this subject is, That *philosophers*, notwithstanding their unanimity as to the existence of ideas, *hardly agree in any one thing else concerning them.* If ideas be not a mere fiction, they must be, of all objects of human knowledge, the things we have best access to know, and to be acquainted with; yet there is nothing about which men differ so much.]

Difference as to their place.—[Some (1) have held them to be self-existent, (2) others to be in the Divine Mind, (3) others in our own minds, and (4) others in the brain or *sensorium*:] I considered the hypothesis of images in the brain, in the fourth chapter of this Essay. As to images in the mind, if any thing more is meant by the image of an object in the mind than the thought of that object, I know not what it means. The distinct conception of an object may, in a metaphorical or analogical sense, be called an *image* of it in the mind. But this image is only the conception of the object, and not the object conceived. It is an act of the mind, and not the object of that act.

Difference as to their origin.—[Some philosophers will have our ideas, or a part of them, to be innate;* others will have them all to be adventitious: some derive them from the senses alone;† others from sensation and reflection;‡ some think they are fabricated by the mind itself;§ others that they are produced by external objects; others that they are the immediate operation of the Deity;|| others say, that impressions are the causes of ideas, and that the causes of impressions are unknown: some think that we have ideas only of material objects, but none of minds, of their operations, or of the relations of things; others will have the immediate object of every thought to be an idea: some think we have abstract ideas, and that by this chiefly we are distinguished from the brutes; others maintain an abstract idea to be an absurdity, and that there can be no such thing: with some they are the immediate objects of thought, with others the only objects.]

* Des Cartes. † Berkeley. ‡ Locke. § Hook. || Malebranche.

XIV. *Fourth general argument against the theory of ideas.*—[A *fourth* reflection is, *That ideas do not make any of the operations of the mind to be better understood*, although it was probably with that view that they have been first invented, and afterwards so generally received.]

We are at a loss to know how we perceive distant objects; how we remember things past; how we imagine things that have no existence. Ideas in the mind seem to account for all these operations: they are all by the means of ideas reduced to one operation; to a kind of feeling, or immediate perception of things present, and in contact with the percipient; and feeling is an operation so familiar, that we think it needs no explication, but may serve to explain other operations.

But this feeling, or immediate perception, is as difficult to be comprehended, as the things which we pretend to explain by it. Two things may be in contact without any feeling or perception; there must therefore be in the percipient a power to feel or to perceive. How this power is produced, and how it operates, is quite beyond the reach of our knowledge. As little can we know whether this power must be limited to things present, and in contact with us. Nor can any man pretend to prove, that the Being, who gave us the power to perceive things present, may not give us the power to perceive things that are distant, to remember things past, and to conceive things that never existed.

XV. *The reduction of the operations of the mind to perception is analogous to another reduction that regards our senses.*—[Some philosophers have endeavoured to make all our senses to be only different modifications of touch; a theory which serves only to confound things that are different, and to perplex and darken things that are clear. The theory of ideas resembles this, by reducing all the operations of the human understanding to the perception of ideas in our own minds.] This power of perceiving ideas is as inexplicable as any of the powers explained by it. And the contiguity of the object contributes nothing at all to make it better understood; because there appears no connection between contiguity and perception, but what is grounded on prejudices, drawn from some imagined similitude between mind and body; and from the supposition, that, in perception, the object acts upon the mind, or the mind upon the object. We have seen how this theory has led philosophers to confound those operations of mind which experience teaches all men to be different, and teaches them to distinguish in common language; and that it has led them to invent a language inconsistent with the principles upon which all language is grounded.

XVI. *Fifth general argument against the theory of ideas.*—[The *last* reflection I shall make upon this theory is, that *the natural and necessary* ***consequences*** *of it furnish a just prejudice*

against it to every man who pays a due regard to the common sense of mankind.*]

Not to mention, that it led the Pythagoreans and Plato to imagine that we see only the shadows of external things, and not the things themselves, and that it gave rise to the Peripatetic doctrine of sensible *species*, one of the greatest absurdities of that ancient system, let us only consider the fruits it has produced since it was new-modelled by Des Cartes. That great reformer in philosophy saw the absurdity of the doctrine of ideas coming from external objects, and refuted it effectually, after it had been received by philosophers for thousands of years; but he still retained ideas in the brain and in the mind. Upon this foundation all our modern systems of the powers of the mind are built. And the tottering state of those fabrics, though built by skilful hands, may give a strong suspicion of the unsoundness of the foundation.

It was this theory of ideas that led Des Cartes, and those that followed him, to think it necessary to prove, by philosophical arguments, the existence of material objects. And who does not see that philosophy must make a very ridiculous figure in the eyes of sensible men, while it is employed in mustering up metaphysical arguments, to prove that there is a sun and a moon, an earth and a sea. Yet we find these truly great men, Des Cartes, Malebranche, Arnauld, and Locke, seriously employing themselves in this argument.

Surely their principles led them to think, that all men, from the beginning of the world, believed the existence of these things upon insufficient grounds, and to think that they would be able to place upon a more rational foundation this universal belief of mankind. But the misfortune is, that all the laboured arguments they have advanced, to prove the existence of those things we see and feel, are mere sophisms. Not one of them will bear examination.

XVII. *Paradoxes of Locke, Berkeley, and Hume.*—I might mention several paradoxes, which Mr. Locke, though by no means fond of paradoxes, was led into by this theory of ideas. [Such as, (1) that the secondary qualities of body are no qualities of body at all, but sensations of the mind: (2) that the primary qualities of body are resemblances of our sensations: (3) that we have no notion of duration, but from the succession of ideas in our minds: (4) that personal identity consists in consciousness; so that the same individual thinking being may make two or three different persons, and several different thinking beings make one person: (5) that judgment is nothing but a perception of the agreement or disagreement of our ideas.] Most of these paradoxes I shall have occasion to examine.

* A sixth argument will be found in Essay IV. chap. ii. sec. 2.

However, all these consequences of the doctrine of ideas were tolerable, compared with those which came afterwards to be discovered by Berkeley and Hume: [(1) that there is no material world: (2) no abstract ideas or notions: (3) that the mind is only a train of related impressions and ideas, without any subject on which they may be impressed: (4) that there is neither space nor time, body nor mind, but impressions and ideas only: and, to sum up all, (5) that there is no probability, even in demonstration itself, nor any one proposition more probable than its contrary.]

XVIII. *The errors which have crept into metaphysical studies not wholly useless.*—These are the noble fruits which have grown upon this theory of ideas, since it began to be cultivated by skilful hands. It is no wonder that sensible men should be disgusted at philosophy, when such wild and shocking paradoxes pass under its name. [However, as these paradoxes have, with great acuteness and ingenuity, been deduced by *just reasoning* from the theory of ideas, they must at last bring this advantage, that positions so shocking to the common sense of mankind, and so contrary to the decisions of all our intellectual powers, will open men's eyes, and break the force of the prejudice which hath held them entangled in that theory.*]

QUESTIONS FOR EXAMINATION.

Six arguments against the philosophic theory of ideas?

Hume more ingenuous than Berkeley in his arguments against the existence of an external world?

Clarke's argument for the existence of ideas?

Its fallaciousness?

External bodies do not act on the mind, nor the mind on them?

The cause of such erroneous suppositions?

In what two ways may Clarke's argument be refuted?

Hume's specious argument against the existence of an external material world?

Why have so many modern philosophers fallen into the Aristotelian system?

An "argumentum ad hominem" applicable to this part of Hume's reasoning?

The argument derived from the illustration of "the table" illogical, is refuted by Reid, and retorted?

To what other reduction, as to our senses, is that of the operations of the mind to perception analogous?

Paradoxes of Locke, Berkeley, and Hume, relative to this theory?

What advantages have resulted from the errors that have crept into metaphysical studies?

* Arguments against the theory of ideas:—(1) It contradicts the universal sense of men. (2) It takes the existence of ideas for granted. (3) Philosophers quarrel amongst themselves concerning these ideas. (4) The theory does not help to explain the operations of the mind. (5) Its consequences objectionable. (6) An immediate object not necessary to excite the passions, why, therefore, the operations of the mind?

CHAPTER XV.

ACCOUNT OF THE SYSTEM OF LEIBNITZ.

I. THERE is yet another system concerning perception, of which I shall give some account, because of the fame of its author. It is the invention of the famous German philosopher Leibnitz, who, while he lived, held the first rank among the Germans in all parts of philosophy, as well as in mathematics, in jurisprudence, in the knowledge of antiquities, and in every branch, both of science and of literature. He was highly respected by emperors, and by many kings and princes, who bestowed upon him singular marks of their esteem. He was a particular favourite of our Queen Caroline, consort of George II. with whom he continued his correspondence by letters after she came to the crown of Britain, till his death.

The famous controversy between him and the British mathematicians, whether he or Sir Isaac Newton was the inventor of that noble improvement in mathematics, called by Newton *the method of fluxions*, and by Leibnitz *the differential method*, engaged the attention of the mathematicians in Europe for several years. He had likewise a controversy with the learned and judicious Dr. Samuel Clarke, about several points of the Newtonian philosophy which he disapproved. The papers which gave occasion to this controversy, with all the replies and rejoinders, had the honour to be transmitted from the one party to the other through the hands of Queen Caroline, and were afterwards published.

His authority, in all matters of philosophy, is still so great in most parts of Germany, that they are considered as bold spirits, and a kind of heretics, who dissent from him in any thing. Wolfius, the most voluminous writer in philosophy of this age, is considered as the great interpreter and advocate of the Leibnitzian system, and reveres as an oracle whatever has dropped from the pen of Leibnitz. This author proposed two great works upon the mind. The first, which I have seen, he published with the title of "Psychologia empirica, seu experimentalis." The other was to have the title of "Psychologia rationalis;" and to it he refers for his explication of the theory of Leibnitz with regard to the mind. But whether it was published I have not learned.

I must therefore take the short account I am to give of this system from the writings of Leibnitz himself, without the light which his interpreter Wolfius may have thrown upon it.

II. *System of monads.*—[Leibnitz conceived the whole universe, bodies as well as minds, to be made up of monads, that is,

simple substances, each of which is, by the Creator in the beginning of its existence, endowed with certain active and perceptive powers.] [A monad, therefore, is an active substance, simple, without parts or figure, *which has within itself the power to produce all the changes it undergoes from the beginning of its existence to eternity*.] The changes which the monad undergoes, of what kind soever, though they may seem to us the effect of causes operating from without, yet they are only the gradual and successive evolutions of its own internal powers, which would have produced all the same changes and motions, although there had been no other being in the universe.

Every human soul is a monad joined to an organised body, which organised body consists of an infinite number of monads, each having some degree of active and of perceptive power in itself. But the whole machine of the body has a relation to that monad which we call the soul, which is, as it were, the centre of the whole.

As the universe is completely filled with monads, without any chasm or void, and thereby every body acts upon every other body, according to its vicinity or distance, and is mutually reacted upon by every other body, it follows, says Leibnitz, that every monad is a kind of living mirror, which reflects the whole universe, according to its point of view, and represents the whole more or less distinctly.

I cannot undertake to reconcile this part of the system with what was before mentioned, to wit, that every change in a monad is the evolution of its own original powers, and would have happened though no other substance had been created. But to proceed.

There are different orders of monads, some higher, and others lower. The higher orders he calls dominant; such is the human soul. The monads that compose the organised bodies of men, animals and plants, are of a lower order, and subservient to the dominant monads. But every monad of whatever order, is a complete substance in itself, indivisible, having no parts, indestructible, because, having no parts, it cannot perish by any kind of decomposition; it can only perish by annihilation, and we have no reason to believe that God will ever annihilate any of the beings which he has made.

The monads of a lower order may, by a regular evolution of their powers, rise to a higher order. They may successively be joined to organised bodies, of various forms and different degrees of perception; but they never die, nor cease to be in some degree active and percipient.

III. *Perception and apperception different.*—[This philosopher makes a distinction between perception and what he calls

apperception. The first is common to all monads, the last proper to the higher orders, among which are human souls.

By apperception he understands that degree of perception which reflects, as it were, upon itself; by which we are conscious of our own existence, and conscious of our perceptions; by which we can reflect upon the operations of our own minds, and can comprehend abstract truths. The mind, in many operations, he thinks, particularly in sleep, and in many actions common to us with the brutes, has not this apperception, although it is still filled with a multitude of obscure and indistinct perceptions, of which we are not conscious.]

He conceives that our bodies and minds are united in such a manner, that neither has any physical influence upon the other. Each performs all its operations by its own internal springs and powers; ☞ yet the operations of one correspond exactly with those of the other, by a pre-established harmony; just as one clock may be so adjusted as to keep time with another, although each has its own moving power, and neither receives any part of its motion from the other.

IV. *An external world not necessary to the system of Leibnitz.*—[So that according to this system all our perceptions of external objects would be the same, though external things had never existed; our perception of them would continue, although, by the power of God, they should this moment be annihilated: we do not perceive external things because they exist, but because the soul was originally so constituted as to produce in itself all its successive changes, and all its successive perceptions, independently of the external objects.]

Every perception or apperception, every operation, in a word, of the soul, is a *necessary* consequence of the state of it immediately preceding that operation; and this state is the *necessary* consequence of the state preceding it; and so backwards, until you come to its first formation and constitution, which produces successively, and by *necessary* consequence, all its successive states to the end of its existence: so that in this respect the soul, and every monad, may be compared to a watch wound up, which having the spring of its motion in itself, by the gradual evolution of its own spring, produces all the successive motions we observe in it.

In this account of Leibnitz' system concerning monads, and the pre-established harmony, I have kept as nearly as I could to his own expressions, in his *new system of the nature and communication of substances, and of the union of soul and body;* and in the several illustrations of that new system which he afterwards published; and in his *principles of nature and grace founded in reason.* I shall now make a few remarks upon this system.

V. *The doctrine of necessity follows immediately from this*

system. [1. To pass over the *irresistible necessity* of all human actions, which makes a part of this system, that will be considered in another place, I observe first, that the *distinction* made *between perception and apperception is obscure* and unphilosophical: as far as we can discover, every operation of our mind is attended with consciousness, and particularly that which we call the perception of external objects; and to speak of a perception of which we are not conscious, is to speak without any meaning.]

As consciousness is the only power by which we discern the operations of our own minds, or can form any notion of them, an operation of mind of which we are not conscious, is, we know not what; and to call such an operation by the name of perception, is an abuse of language. No man can perceive an object, without being conscious that he perceives it. No man can think, without being conscious that he thinks. What men are not conscious of, cannot therefore, without impropriety, be called either perception or thought of any kind. And if we will suppose operations of mind, of which we are not conscious, and give a name to such creatures of our imagination, that name must signify what we know nothing about.

VI. *The system of Leibnitz is at variance with all our notions of body.* [2. To suppose bodies organised or unorganised, to be made up of *indivisible* monads which have no parts, is contrary to all that we know of body. It is essential to a body to have parts; and every part of a body, is a body, and has parts also. No number of parts, *without extension or figure*, not even an infinite number, if we may use that expression, can, by being put together, make a whole that has extension and figure, which all bodies have.]

[3. It is contrary to all that we know of bodies, to ascribe to the monads, of which they are supposed to be compounded, *perception and active force.*] If a philosopher thinks proper to say, that a clod of earth both perceives and has active force, let him bring his proofs. But he ought not to expect, that men who have understanding, will so far give it up as to receive without proof whatever his imagination may suggest.

And with the testimony of our senses.—[4. This system overturns all authority of our senses, and leaves not the least ground to believe the existence of the objects of sense, or the existence of anything which depends upon the authority of our senses;] for our perception of objects, according to this system, has no dependence upon anything external, and would be the same as it is, supposing external objects had never existed, or that they were from this moment annihilated.

VII. *The system of Leibnitz involves the same absurdity as those of most modern philosophers.*—[It is remarkable that Leibnitz's system, that of Malebranche, and the common system

of ideas, or images of external objects in the mind, do all agree in overturning all the authority of our senses; and this one thing, as long as men retain their senses, will always make all these systems truly ridiculous.]

VIII. [5. The last observation I shall make upon this system, which indeed is equally applicable to all the systems of perception I have mentioned, is, that *it is all hypothesis*, made up of conjectures and suppositions, without proof.] The Peripatetics supposed sensible *species* to be sent forth by the objects of sense. The moderns suppose ideas in the brain, or in the mind. Malebranche supposed, that we perceive the ideas of the Divine Mind. Leibnitz supposed monads and a pre-established harmony; and these monads being creatures of his own making, he is at liberty to give them what properties and powers his fancy may suggest. In like manner, the Indian philosopher supposed that the earth is supported by a huge elephant, and that the elephant stands on the back of a huge tortoise.

Such suppositions, while there is no proof of them offered, are nothing but the fictions of human fancy, and we ought no more to believe them, than we believe Homer's fictions of Apollo's silver bow, or Minerva's shield, or Venus's girdle. Such fictions in poetry are agreeable to the rules of the art: they are intended to please, not to convince. But the philosophers would have us to believe their fictions, though the account they give of the phenomena of nature has commonly no more probability than the account that Homer gives of the plague in the Grecian camp, from Apollo taking his station on a neighbouring mountain, and from his silver bow letting fly his swift arrows into the camp.

Men then only begin to have a true taste in philosophy, when they have learned to hold hypotheses in just contempt; and to consider them as the reveries of speculative men, which will never have any similitude to the works of God.

The Supreme Being has given us some intelligence of his work, by what our senses inform us of external things, and by what our consciousness and reflection inform us concerning the operations of our own minds. Whatever can be inferred from these common informations, by just and sound reasoning, is true and legitimate philosophy: but what we add to this from conjecture is all spurious and illegitimate.

IX. ***All those systems which attempt to explain the nature of "Perception" are necessarily faulty.***—[After this long account of the theories advanced by philosophers, to account for our perception of external objects, I hope it will appear, that neither Aristotle's theory of sensible species, nor Malebranche's, of our seeing things in God, nor the common theory of our perceiving ideas in our own minds, nor Leibnitz' theory of *monads, and a pre-established harmony*, give any satisfying account of this power

of the mind, or make it more intelligible than it is without their aid.] They are conjectures, and if they were true, would solve no difficulty, but raise many new ones. It is therefore more agreeable to good sense, and to sound philosophy, to rest satisfied with what our consciousness and attentive reflection discover to us of the nature of perception, than by inventing hypotheses, to attempt to explain things which are above the reach of human understanding. I believe no man is able to explain how we perceive external objects, any more than how we are conscious of those that are internal. Perception, consciousness, memory, and imagination, are all original and simple powers of the mind, and parts of its constitution. For this reason, though I have endeavoured to show, that the theories of philosophers on this subject are ill grounded and insufficient, I do not attempt to substitute any other theory in their place.

Every man feels that perception gives him an invincible belief of the existence of that which he perceives; and that this belief is not the effect of reasoning, but the immediate consequence of perception. When philosophers have wearied themselves and their readers with their speculations upon this subject, they can neither strengthen this belief, nor weaken it; nor can they show how it is produced. It puts the philosopher and the peasant upon a level; and neither of them can give any other reason for believing his senses, than that he finds it impossible for him to do otherwise.

QUESTIONS FOR EXAMINATION.

Leibnitz' theory of monads?

Distinction between perception and apperception?—Its absurdity, p. 162.

In Leibnitz' system the existence of an external world not necessary?

How does the doctrine of necessity immediately follow from Leibnitz' system?

This theory at variance with all our notions of body, and it would overturn the evidence of our senses?

In what respect are all those systems, which endeavour to explain perception, defective?

CHAPTER XVI.

OF SENSATION.

I. *The names of many of our sensations ambiguous.*—HAVING finished what I intend, with regard to that act of mind which we call the perception of an external object, I proceed to consider another, which, by our constitution, is conjoined with perception, and *not with perception only*, but with many other acts of our minds; and that is sensation. To prevent repetition, I must

refer the reader to the explication of this word given in Essay I. chap. i.

Almost all our perceptions have corresponding sensations which constantly accompany them, and, on that account, are very apt to be confounded with them. Neither ought we to expect, that the sensation, and its corresponding perception, should be distinguished in common language, because the purposes of common life do not require it. Language is made to serve the purposes of ordinary conversation; and we have no reason to expect that it should make distinctions that are not of common use. [Hence it happens, that a *quality* perceived, and the *sensation* corresponding to that perception, often go under the same name.

This makes the names of most of our sensations ambiguous, and this ambiguity hath very much perplexed philosophers.] It will be necessary to give some instances, to illustrate the distinction between our sensations and the objects of perception.

When I smell a rose, there is in this operation both sensation and perception. The agreeable odour I feel, considered by itself, without relation to any external object, is merely a sensation. It affects the mind in a certain way; and this affection of the mind may be conceived, without a thought of the rose, or any other object. This sensation can be nothing else than it is felt to be. Its very essence consists in being felt; and when it is not felt, it is not. There is no difference between the sensation and the feeling of it; they are one and the same thing. It is for this reason, that we before observed, that, in sensation, there is no object distinct from that act of the mind by which it is felt; and this holds true with regard to all sensations.

Let us next attend to the perception which we have in smelling a rose. Perception has always an external object; and the object of my perception, in this case, is that quality in the rose which I discern by the sense of smell. Observing that the agreeable sensation is raised when the rose is near, and ceases when it is removed, I am led, by my nature, to conclude some quality to be in the rose, which is the cause of this sensation. This quality in the rose is the object perceived; and that act of my mind, by which I have the conviction and belief of this quality, is what in this case I call perception.

But it is here to be observed, that the sensation I feel, and the quality in the rose which I perceive, are both called by the same name. The smell of a rose is the name given to both: so that this name hath two meanings; and the distinguishing its different meanings removes all perplexity, and enables us to give clear and distinct answers to questions, about which philosophers have held much dispute.

II. *The same name applied to the sensation and to the quality.*— Thus, if it is asked, Whether the smell be in the rose, or in the

mind that feels it? the answer is obvious: That there are two different things signified by the smell of a rose; one of which is in the mind, and can be in nothing but in a sentient being; the other is truly and properly in the rose. The sensation which I feel is in my mind. The mind is the sentient being: and as the rose is insentient, there can be no sensation, nor any thing resembling sensation in it. [But this sensation in my mind is occasioned by a certain quality in the rose, which is called by the same name with the sensation, *not on account of any similitude*, but because of their *constant concomitancy*.]

Their relation.—All the names we have for smells, tastes, sounds, and for the various degrees of heat and cold, have a like ambiguity; and what has been said of the smell of a rose may be applied to them. They signify both a sensation and a quality perceived by means of that sensation. ☞ *The first is the sign, the last the thing signified.* As both are conjoined by nature, and as the purposes of common life do not require them to be disjoined in our thoughts, they are both expressed by the same name: and this ambiguity is to be found in all languages, because the reason of it extends to all.

The same ambiguity is found in the names of such diseases as are indicated by a particular painful sensation, such as the toothache, the headache. The toothache signifies a painful sensation, which can only be in a sentient being; but it signifies also a disorder in the body, which has no similitude to a sensation, but is naturally connected with it.

Pressing my hand with force against the table, I feel pain, and I feel the table to be hard. The pain is a sensation of the mind, and there is nothing that resembles it in the table. The hardness is in the table, nor is there any thing resembling it in the mind. Feeling is applied to both, but in a different sense: being a word common to the act of sensation, and to that of perceiving by the sense of touch.

III. *Sensations which excite least attention.*—[I touch the table gently with my hand, and I feel it to be smooth, hard, and cold. These are qualities of the table perceived by touch; but I perceive them by means of a sensation which indicates them. This sensation not being painful, I commonly give no attention to it.] It carries my thought immediately to the thing signified by it, and is itself forgot, as if it had never been. But by repeating it, and turning my attention to it, and abstracting my thought from the thing signified by it, I find it to be merely a sensation, and that it has no similitude to the hardness, smoothness, or coldness of the table which are signified by it.

It is indeed difficult, at first, to disjoin things in our attention which have always been conjoined, and to make that an object of reflection which never was so before; but some pains and

practice will overcome this difficulty in those who have got the habit of reflecting on the operations of their own minds.

Although the present subject leads us only to consider the sensations which we have by means of our external senses, yet it will serve to illustrate what has been said, and I apprehend is of importance in itself to observe, that many operations of mind, to which we give one name, and which we always consider as one thing, are complex in their nature, and made up of several more simple ingredients; and of these ingredients sensation very often makes one. Of this we shall give some instances.

The appetite of hunger includes an uneasy sensation, and a desire of food. Sensation and desire are different acts of mind. The last, from its nature, must have an object; the first has no object. These two ingredients may always be separated in thought; perhaps they sometimes are, in reality: but hunger includes both.

Benevolence towards our fellow-creatures includes an agreeable feeling; but it includes also a desire of the happiness of others. The ancients commonly called it desire. Many moderns choose rather to call it a feeling. Both are right; and they only err who exclude either of the ingredients. Whether these two ingredients are necessarily connected, is perhaps difficult for us to determine, there being many necessary connections which we do not perceive to be necessary; but we can disjoin them in thought. They are different acts of the mind.

An uneasy feeling, and a desire, are in like manner the ingredients of malevolent affections; such as malice, envy, revenge. The passion of fear includes an uneasy sensation or feeling, and an opinion of danger; and hope is made up of the contrary ingredients. When we hear of a heroic action, the sentiment which it raises in our mind is made up of various ingredients. There is in it an agreeable feeling, a benevolent affection to the person, and a judgment or opinion of his merit.

IV. *Another characteristic of sensation.*—[If we thus analyse the various operations of our minds, we shall find, that many of them which we consider as perfectly simple, because we have been accustomed to call them by one name, are compounded of more simple ingredients; and that sensation, or *feeling*, which is only a more refined kind of sensation, makes one ingredient, not only in the perception of external objects, but in most operations of the mind.]

A small degree of reflection may satisfy us, that the number and variety of our sensations and feelings is prodigious. For, to omit all those which accompany our appetites, passions, and affections, our moral sentiments, and sentiments of taste, even our external senses furnish a great variety of sensations differing in kind, and almost in every kind an endless variety of degrees.

Every variety we discern, with regard to taste, smell, sound, colour, heat and cold, and in the tangible qualities of bodies, is indicated by a sensation corresponding to it.

V. *General division of our sensations.*—[The most general and the most important division of our sensations and feelings, is into the agreeable, the disagreeable, and the indifferent.] Every thing we call pleasure, happiness, or enjoyment, on the one hand; and on the other, every thing we call misery, pain, or uneasiness, is sensation or feeling. For no man can for the present be more happy, or more miserable than he feels himself to be. He cannot be deceived with regard to the enjoyment or suffering of the present moment.

But I apprehend, that besides the sensations that are either agreeable or disagreeable, there is still a greater number that are indifferent. To these we give so little attention that they have no name, and are immediately forgot, as if they had never been; and it requires attention to the operations of our minds to be convinced of their existence.

For this end we may observe, that to a good ear every human voice is distinguishable from all others. Some voices are pleasant, some disagreeable; but the far greater part can neither be said to be one or the other. The same thing may be said of other sounds, and no less of tastes, smells, and colours; and if we consider that our senses are in continual exercise while we are awake, that some sensation attends every object they present to us, and that familiar objects seldom raise any emotion pleasant or painful, we shall see reason, besides the agreeable and disagreeable, to admit a third class of sensations, that may be called indifferent.

VI. *Use of indifferent sensations.*—[The sensations that are indifferent, are far from being useless. *They serve as signs to distinguish things that differ;* and the information we have concerning things external, comes by their means.] Thus, if a man had no ear to receive pleasure from the harmony or melody of sounds, he would still find the sense of hearing of great utility. Though sounds gave him neither pleasure nor pain of themselves, they would give him much useful information; and the like may be said of the sensations we have by all the other senses.

VII. *Sensations different from feelings.*—[As to the sensations and feelings that are agreeable or disagreeable, they differ much, not only in degree, but in kind and in dignity. Some belong to the animal part of our nature, and are common to us with the brutes. Others belong to the rational and moral part. The first are more properly called *sensations*, the last *feelings*. The French word *sentiment* is common to both.]

The intention of Nature in them is for the most part obvious,

and well deserving our notice. It has been beautifully illustrated by a very elegant French writer, in his "Theorie des sentiments agreeables."

The Author of nature, in the distribution of agreeable and painful feelings, hath wisely and benevolently consulted the good of the human species, and hath even shown us, by the same means, what tenor of conduct we ought to hold. For, *first*, The painful sensations of the animal kind are admonitions to avoid what would hurt us; and the agreeable sensations of this kind, invite us to those actions that are necessary to the preservation of the individual, or of the kind. *Secondly*, By the same means nature invites us to moderate bodily exercise, and admonishes us to avoid idleness and inactivity on the one hand, and excessive labour and fatigue on the other. *Thirdly*, The moderate exercise of all our rational powers gives pleasure. *Fourthly*, Every species of beauty is beheld with pleasure, and every species of deformity with disgust; and we shall find all that we call beautiful, to be something estimable or useful in itself, or a sign of something that is estimable or useful. *Fifthly*, The benevolent affections are all accompanied with an agreeable feeling, the malevolent with the contrary. And, *sixthly*, The highest, the noblest, and most durable pleasure, is that of doing well, and acting the part that becomes us; and the most bitter and painful sentiment, the anguish and remorse of a guilty conscience. These observations, with regard to the economy of nature in the distribution of our painful and agreeable sensations and feelings, are illustrated by the author last mentioned, so elegantly and judiciously, that I shall not attempt to say any thing upon them after him.

I shall conclude this chapter by observing, that as the confounding our sensations with that perception of external objects, which is constantly conjoined with them, has been the occasion of most of the errors and false theories of philosophers with regard to the senses; so the distinguishing these operations seems to me to be the key that leads to a right understanding of both.

VIII. *Sensation different from perception.*—[Sensation, taken by itself, implies neither the *conception* nor *belief* of any external object. It supposes a sentient being, and a certain manner in which that being is affected, but it supposes no more. Perception implies an immediate conviction and belief of something external; something different both from the mind that perceives, and from the act of perception.] Things so different in their nature ought to be distinguished; but by our constitution they are always united. Every different perception is conjoined with a sensation that is proper to it. The one is the sign, the other the thing signified. They coalesce in our imagination. They are signified by one name, and are considered as one simple

operation. The purposes of life do not require them to be distinguished.

It is the philosopher alone who has occasion to distinguish them, when he would analyse the operation compounded of them. But he has no suspicion that there is any composition in it; and to discover this requires a degree of reflection which has been too little practised even by philosophers.

IX. *Error of ancient philosophers respecting sensation.*—[In the old philosophy, sensation and perception were perfectly confounded. The sensible species coming from the object, and impressed upon the mind, was the whole; and you might call it sensation or perception as you pleased.]

Des Cartes and Locke, attending more to the operations of their own minds, say, That the sensations by which we have notice of secondary qualities, have no resemblance to any thing that pertains to body; but they did not see that this might with equal justice be applied to the primary qualities. Mr. Locke maintains, that the sensations we have from primary qualities are resemblances of those qualities. This shows how grossly the most ingenious men may err with regard to the operations of their minds. It must indeed be acknowledged, that it is much easier to have a distinct notion of the sensations that belong to secondary, than of those that belong to the primary qualities. The reason of this will appear in the next chapter.

But had Mr. Locke attended with sufficient accuracy to the sensations which he was every day and every hour receiving from primary qualities, he would have seen, that they can as little resemble any quality of an inanimated being, as pain can resemble a cube or a circle.

What had escaped this ingenious philosopher, was clearly discerned by Bishop Berkeley. He had a just notion of sensations, and saw that it was impossible that any thing in an insentient being could resemble them; a thing so evident in itself, that it seems wonderful that it should have been so long unknown.

X. *An abuse of words seems to have given rise to the system of Berkeley.*—But let us attend to the consequence of this discovery. [Philosophers, as well as the vulgar, had been accustomed to comprehend both *sensation and perception under one name*, and to consider them as one uncompounded operation.] [Philosophers,* even more than the vulgar, gave the name of sensation to the whole operation of the senses; and all the notions we have of material things were called ideas of sensation. This led Bishop Berkeley to take one ingredient of a complex operation for the whole; and having clearly discovered the nature of sensation, taking it for granted, that all that the senses present to the mind is sensation, which can have no resemblance to any thing material, he concluded that there is no material world.]

* Vide chap. x. sect. 9, p. 120, of this Essay.

If the senses furnished us with no materials of thought but sensations, his conclusion must be just; for no sensation can give us the conception of material things, far less any argument to prove their existence. But if it is true that by our senses we have not only a variety of sensations, but likewise a conception, and an immediate natural conviction of external objects, he reasons from a false supposition, and his arguments fall to the ground.

QUESTIONS FOR EXAMINATION.

The names of many of our sensations why ambiguous?
Why is the same name applied to the quality and to the sensation it produces?
What is the true nature of the connexion between them?
When do our sensations excite an almost imperceptible attention?
Most general division of our sensations?
Indifferent sensations why not wholly useless?
How are agreeable sensations divided?
Distinction between sensation and perception?
How did the ancients err as to our sensations?
What vulgar error in language laid the foundation of Berkeley's system of philosophy?

CHAPTER XVII.

OF THE OBJECTS OF PERCEPTION; AND FIRST, OF PRIMARY AND SECONDARY QUALITIES.

I. *The distinctions between primary and secondary qualities abolished and revived at different periods.*—[THE *objects of perception* are the various qualities of bodies.] Intending to treat of these only in general, and chiefly with a view to explain the notions which our senses give us of them, I begin with the distinction between primary and secondary qualities. These were distinguished very early. [The Peripatetic system confounded them, and left no difference. The distinction was again revived by Des Cartes and Locke, and a second time abolished by Berkeley and Hume.] If the real foundation of this distinction can be pointed out, it will enable us to account for the various revolutions in the sentiments of philosophers concerning it.

Every one knows that extension, divisibility, figure, motion, solidity, hardness, softness, and fluidity, were by Mr. Locke called *primary qualities of body*; and that sound, colour, taste, smell, and heat or cold, were called *secondary qualities*. Is there a just foundation for this distinction? Is there any thing common to the primary which belongs not to the secondary? And what is it?

I answer, That there appears to me to be a real foundation for the distinction; and it is this: that our senses give us a *direct* and a *distinct* notion of the primary qualities, and inform us what they are in themselves: but of the secondary qualities, our senses give us only a *relative* and *obscure* notion. They inform us only, that they are qualities that affect us in a certain manner, that is, produce in us a certain sensation; but as to what they are in themselves our senses leave us in the dark.

Every man capable of reflection may easily satisfy himself, that he has a perfectly clear and distinct notion of extension, divisibility, figure, and motion. The solidity of a body means no more, but that it excludes other bodies from occupying the same place at the same time. Hardness, softness, and fluidity, are different degrees of cohesion in the parts of a body. It is fluid, when it has no sensible cohesion; soft when the cohesion is weak; and hard when it is strong: of the cause of this cohesion we are ignorant, but the thing itself we understand perfectly, being immediately informed of it by the sense of touch. It is evident, therefore, that of the primary qualities we have a clear and distinct notion; we know what they are, though we may be ignorant of their causes.

I observed further, that the notion we have of primary qualities is direct, and not relative only. A relative notion of a thing is, strictly speaking, no notion of a thing at all, but only of some relation which it bears to something else.

Thus gravity sometimes signifies the *tendency* of bodies towards the earth; sometimes it signifies the *cause* of that tendency.* When it means the first, I have a direct and distinct notion of gravity: I see it, and feel it, and know perfectly what it is; but this tendency must have a cause. We give the same name to the cause; and that cause has been an object of thought and of speculation. Now what notion have we of this cause when we think and reason about it? It is evident, we think of it as an unknown cause, of a known effect. This is a relative notion, and it must be obscure, because it gives us no conception of what the thing is, but of what relation it bears to something else. Every relation which a thing unknown bears to something that is known, may give a relative notion of it; and there are many objects of thought, and of discourse, of which our faculties can give no better than a relative notion.

Having premised these things to explain what is meant by a relative notion, it is evident, that our notion of primary qualities is not of this kind; we know what they are, and not barely what relation they bear to something else.

* Hence the confused view of Newton respecting gravity, which he calls both a *cause* and an *effect*. The same thing cannot be the cause and effect of the same thing.

It is otherwise with secondary qualities. If you ask me, what is that quality or modification in a rose which I call its smell, I am at a loss to answer directly. Upon reflection I find, that I have a distinct notion of the sensation which it produces in my mind. But there can be nothing like to this sensation in the rose, because it is insentient. The quality in the rose is something which occasions the sensation in me; but what that something is, I know not. My senses give me no information upon this point. The only notion therefore my senses give is this, that smell in the rose is an unknown quality or modification, which is the cause or occasion of a sensation which I know well. The relation which this unknown quality bears to the sensation with which nature hath connected it, is all I learn from the sense of smelling; but this is evidently a relative notion. The same reasoning will apply to every secondary quality.

II. *The distinction real.*—[Thus I think it appears, that there is a real foundation for the distinction of primary from secondary qualities; and that they are distinguished by this, that of the primary we have by our senses a *direct and distinct notion;* but of the secondary only a *relative* notion, which must, because it is only relative, be obscure; they are conceived only as the unknown causes or occasions of certain sensations with which we are well acquainted.

The account I have given of this distinction is founded upon no *hypothesis.** Whether our notions of primary qualities are direct and distinct, those of the secondary relative and obscure, is a matter of fact, of which every man may have certain knowledge by attentive reflection upon them. To this reflection I appeal, as the proper test of what has been advanced, and proceed to make some reflections on this subject.

1. The *primary qualities are neither sensations, nor are they resemblances of sensations.* This appears to me self-evident. I have a clear and distinct notion of each of the primary qualities. I have a clear and distinct notion of sensation. I can compare the one with the other; and when I do so, I am not able to discern a resembling feature. [(1) Sensation is the act, or the feeling, (I dispute not which) of a sentient being. Figure, divisibility, solidity, *are neither acts nor feelings.* (2) Sensation supposes a sentient being as its subject; for a sensation that is not felt by some sentient being, is an absurdity. *Figure and divisibility suppose a subject that is figured and divisible, but not a subject that is sentient.*]

2. [We have no reason to think, that the sensations by which we have notice of secondary qualities *resemble* any quality of body. The absurdity of this notion has been clearly shown by Des Cartes, Locke, and many modern philosophers.] It was a

* As Locke's is.

tenet of the ancient philosophy, and is still by many imputed to the vulgar, but only as a vulgar error. It is too evident to need proof, that the vibrations of a sounding body do not resemble the sensation of sound, nor the effluvia of an odorous body the sensation of smell.

3. *As to their causes, primary qualities may admit of dispute.*—[The distinctness of our notions of primary qualities prevents all questions and disputes about their nature. There are no different opinions about the nature of extension, figure, or motion, or the nature of any primary quality. Their nature is manifest to our senses, and cannot be unknown to any man, or mistaken by him, *though their causes may admit of dispute.*

III. *A further distinction between primary and secondary qualities.*—[The primary qualities are the objects of the *mathematical sciences;* and the distinctness of our notions of them enables us to reason demonstratively about them to a great extent. Their various modifications are precisely defined in the imagination, and thereby capable of being compared, and their relations determined with precision and certainty.]

It is not so with secondary qualities. Their nature not being manifest to the sense, may be a subject of dispute. Our feeling informs us that the fire is hot; but it does not inform us what that heat of the fire is. But does it not appear a contradiction, to say we know that the fire is hot, but we know not what that heat is? I answer: There is the same appearance of contradiction in many things, that must be granted. We know that wine has an inebriating quality; but we know not what that quality is. It is true, indeed, that if we had not some notion of what is meant by the heat of fire, and by an inebriating quality, we could affirm nothing of either with understanding. We have a notion of both; but it is only a relative notion. We know that they are the causes of certain known effects.

4. [The nature of secondary qualities is a proper subject of *philosophical* disquisition; and in this philosophy has made some progress.] It has been discovered, that the sensation of smell is occasioned by the effluvia of bodies; that of sound by their vibration. The disposition of bodies to reflect a particular kind of light occasions the sensation of colour. Very curious discoveries have been made of the nature of heat, and an ample field of discovery in these subjects remains.

5. [We may see why the *sensations belonging to secondary qualities* are *an object of our attention,* while those which belong to the primary are not.

The first are not only signs of the object perceived, but they bear a capital part in the notion we form of it. We conceive it only as that which occasions such a sensation, and therefore cannot reflect upon it without thinking *of the sensation* which it

occasions:] we have no other mark whereby to distinguish it. The thought of a secondary quality, therefore, always carries us back to the sensation which it produces. We give the same name to both, and are apt to confound them together.

[But having a clear and distinct conception of primary qualities, we have no need when we think of them to recall their sensations. When a primary quality is perceived, the sensation immediately leads our thought to the quality signified by it, and is itself forgot.] We have no occasion afterwards to reflect upon it; and so we come to be as little acquainted with it, as if we had never felt it. This is the case with the sensations of all primary qualities, ☞ *when they are not so painful or pleasant as to draw our attention.*

When a man moves his hand rudely against a pointed hard body, he feels pain, and may easily be persuaded that this pain is a sensation, and that there is nothing resembling it in the hard body; at the same time he perceives the body to be hard and pointed, and he knows that these qualities belong to the body only. In this case, it is easy to distinguish what he feels from what he perceives.

Let him again touch the pointed body gently, so as to give him no pain; and now you can hardly persuade him that he feels any thing but the figure and hardness of the body; so difficult it is to attend to the sensations belonging to primary qualities, when they are neither pleasant nor painful. They carry the thought to the external object, and immediately disappear and are forgot. Nature intended them only as signs; and when they have served that purpose they vanish.

IV. We are now to consider the opinions both of the vulgar,* and of philosophers upon this subject. As to the former, it is not to be expected that they should make distinctions which have no connexion with the common affairs of life; they do not therefore distinguish the primary from the secondary qualities, but speak of both as being equally qualities of the external object. Of the primary qualities they have a distinct notion, as they are immediately and distinctly perceived by the senses; of the secondary, their notions, as I apprehend, are confused and indistinct, rather than erroneous. A secondary quality is the unknown cause or occasion of a well-known effect; and the same name is common to the cause and the effect. Now, to distinguish clearly the different ingredients of a complex notion, and, at the same time, the different meanings of an ambiguous word, is the work of a philosopher; and is not to be expected of the vulgar, when their occasions do not require it.

I grant, therefore, that the notion which the vulgar have of

* It is not probable that the vulgar think of qualities at all.

secondary qualities, is indistinct and inaccurate. But there seems to be a contradiction between the vulgar and the philosopher upon this subject, and each charges the other with a gross absurdity. The vulgar say, that fire is hot, and snow cold, and sugar sweet; and that to deny this is a gross absurdity, and contradicts the testimony of our senses. The philosopher says, that heat, and cold, and sweetness, are nothing but sensations in our minds; and it is absurd to conceive, that these sensations are in the fire, or in the snow, or in the sugar.

V. I believe [*this contradiction between the vulgar and the philosopher is more apparent than real;* and that it is owing to *an abuse of language* on the part of the philosopher, and to *indistinct notions* on the part of the vulgar.] The philosopher says, there is no heat in the fire, meaning, that the fire has not the sensation of heat. His meaning is just; and the vulgar will agree with him, as soon as they understand his meaning: but his language is improper; for there is really a quality in the fire, of which the proper name is heat; and the name of heat is given to this quality, both by philosophers and by the vulgar, much more frequently than to the sensation of heat. This speech of the philosopher, therefore, is meant by him in one sense; it is taken by the vulgar in another sense. In the sense in which they take it, it is indeed absurd, and so they hold it to be. In the sense in which he means it, it is true; and the vulgar, as soon as they are made to understand that sense, will acknowledge it to be true. They know as well as the philosopher, that the fire does not feel heat; and this is all that he means by saying there is no heat in the fire.

VI. *Opinion of the ancient atomists.*—In the opinions of philosophers about primary and secondary qualities, there have been, as was before observed, several revolutions: [they were distinguished long before the days of Aristotle, by the sect called *atomists;* among whom Democritus made a capital figure. In those times, the name of *quality* was applied only to those we call secondary qualities; the primary being considered as essential to matter, were not called qualities. That the atoms, which they held to be the first principles of things, were extended, solid, figured, and moveable, there was no doubt; but the question was, whether they had smell, taste, and colour? or, as it was commonly expressed, whether they had qualities? The atomists maintained, that they had not; that *the qualities were not in bodies, but were something resulting from the operation of bodies upon our senses.*]

Its illustration.—[It would seem, that when men began to speculate upon this subject, the primary qualities appeared so clear and manifest, that they could entertain no doubt of their existence wherever matter existed; but the secondary so obscure,

that they were at a loss where to place them.] They used this comparison; as fire, which is neither in the flint nor in the steel, is produced by their collision, so those qualities, though not in bodies, are produced by their impulse upon our senses.

[This doctrine was opposed by Aristotle. He believed taste and colour to be substantial forms of bodies, and that their species, as well as those of figure and motion, are received by the senses.]

In believing, that what we commonly call *taste* and *colour* is something really inherent in body, and does not depend upon its being tasted and seen, he followed nature. But, in believing that our sensations of taste and colour are the forms or species of those qualities received by the senses, he followed his own theory, which was an absurd fiction. Des Cartes not only showed the absurdity of sensible species received by the senses, but gave a more just and more intelligible account of secondary qualities than had been given before. Mr. Locke followed him, and bestowed much pains upon this subject. He was the first, I think, that gave them the name of *secondary* qualities, which has been very generally adopted. He distinguished the sensation from the quality in the body which is the cause or occasion of that sensation, and showed that there neither is nor can be any similitude between them.

By this account, the senses are acquitted of putting any fallacy upon us; the sensation is real, and no fallacy; the quality in the body, which is the cause or occasion of this sensation, is likewise real, though the nature of it is not manifest to our senses. If we impose upon ourselves, by confounding the sensation with the quality that occasions it, this is owing to rash judgment or weak understanding, but not to any false testimony of our senses.

This account of secondary qualities I take to be very just; and if Mr. Locke had stopped here, he would have left the matter very clear. But he thought it necessary to introduce the theory of ideas, to explain the distinction between primary and secondary qualities, and by that means, as I think, perplexed and darkened it.

VII. *Locke's absurd distinction of ideas.*—When philosophers speak about ideas, we are often at a loss to know what they mean by them, and may be apt to suspect that they are mere fictions that have no existence. They have told us that, by the ideas which we have immediately from our senses, they mean our sensations. These, indeed, are real things, and not fictions. We may, by accurate attention to them, know perfectly their nature; and if philosophers would keep by this meaning of the word *idea*, when applied to the objects of sense, they would at least be more intelligible. Let us hear how Mr. Locke explains the nature of those ideas, when applied to primary and secondary qua-

lities, Book ii. chap. viii. sect. vii. tenth edition. [" To discover the nature of our ideas the better, and to discourse of them intelligibly, it will be convenient to distinguish them, as they are ideas, or perceptions in our minds, and as they are modifications of matter in the bodies that cause such perceptions in us, that so we may not think (as perhaps usually is done), that they are exactly the images and resemblances of something inherent in the subject:] most of those of sensation being, in the mind, no more the likeness of something existing without us, than the names that stand for them are the likeness of our ideas, which, yet, upon hearing, they are apt to excite in us."

This way of distinguishing a thing, *first*, as what it is; and *secondly*, as what it is not, is, I apprehend, a very extraordinary way of discovering its nature: and if ideas are ideas or perceptions in our minds, and at the same time the modifications of matter in the bodies that cause such perceptions in us, it will be no easy matter to discourse of them intelligibly.

The discovery of the nature of ideas is carried on in the next section, in a manner no less extraordinary. " Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call *idea;* and the power to produce any idea in our mind, I call *quality* of the subject wherein that power is. Thus, a snowball having the power to produce in us the ideas of white, cold, and round, the powers to produce those ideas in us, *as they are in the snowball,* I call *qualities;* and as they are sensations, or perceptions in our understandings, I call them *ideas;* which ideas, if I speak of them sometimes as in the things themselves, I would be understood to mean those qualities in the objects which produce them in us."

These are the distinctions which Mr. Locke thought convenient, in order to discover the nature of our ideas of the qualities of matter the better, and to discourse of them intelligibly. I believe it will be difficult to find two other paragraphs in the Essay so unintelligible. Whether this is to be imputed to the intractable nature of ideas, or to an oscitancy of the author, with which he is very rarely chargeable, I leave the reader to judge. There are, indeed, several other passages in the same chapter, in which a like obscurity appears; but I do not choose to dwell upon them. The conclusion drawn by him from the whole is, that primary and secondary qualities are distinguished by this, that the ideas of the former are resemblances or copies of them; but the ideas of the other are not resemblances of them. Upon this doctrine, I beg leave to make two observations.

VIII. *Erroneous positions of Locke refuted.—First,* [Taking it for granted, that, by the ideas of primary and secondary qualities, he means the sensations they excite in us, I observe that it

appears strange, that a sensation should be the *idea* of a quality in body, to which it is acknowledged to bear no resemblance.] If the sensation of sound be the idea of that vibration of the sounding body which occasions it, a surfeit may, for the same reason, be the idea of a feast.

A *second* observation is, That [when Mr. Locke affirms, that the ideas of primary qualities, that is, the sensations they raise in us, are resemblances of those qualities, he seems neither to have given due attention to those sensations, nor to the nature of sensation in general.]

☞ Let a man press his hand against a hard body, and let him attend to the sensation he feels, excluding from his thought every thing external, even the body that is the cause of his feeling. This abstraction indeed is difficult, and seems to have been little, if at all, practised: but it is not impossible, and it is evidently the only way to understand the nature of the sensation. A due attention to this sensation will satisfy him, that it is no more like hardness in a body, than the sensation of sound is like vibration in the sounding body.

I know of no ideas but my conceptions; and my idea of hardness in a body, is the conception of such a cohesion of its parts as requires great force to displace them. I have both the conception and belief of this quality in the body, at the same time that I have the sensation of pain, by pressing my hand against it. The sensation and perception are closely conjoined by my constitution; but I am sure they have no similitude: I know no reason why the one should be called the idea of the other, which does not lead us to call every natural effect the idea of its cause.

Neither did Mr. Locke give due attention to the nature of sensation in general, when he affirmed, that the ideas of primary qualities, that is, the sensations excited by them, are resemblances of those qualities.

☞ That there can be nothing like sensation in an insentient being, or like thought in an unthinking being, is self-evident, and has been shown, to the conviction of all men that think, by Bishop Berkeley; yet this was unknown to Mr. Locke. It is an humbling consideration, that, in subjects of this kind, self-evident truths may be hid from the eyes of the most ingenious men. But we have, withal, this consolation, that, when once discovered, they shine by their own light; and that light can no more be put out.

IX. ***Locke's distinction just,—his application of the theory of ideas to its explanation not so.***—[Upon the whole, Mr. Locke, in making secondary qualities to be powers in bodies to excite certain sensations in us, has given a just and distinct analysis of what our senses discover concerning them; but, in applying the theory of ideas to them, and to the primary qualities, he has been

led to say things that darken the subject, and that will not bear examination.]

Bishop Berkeley having adopted the sentiments common to philosophers, concerning the ideas we have by our senses, to wit, that they are all sensations, saw more clearly the necessary consequence of this doctrine: which is, that there is no material world; no qualities primary or secondary; and, consequently, no foundation for any distinction between them. He exposed the absurdity of a resemblance between our sensations and any quality, primary or secondary, of a substance that is supposed to be insentient. Indeed, if it is granted that the senses have no other office but to furnish us with sensations, it will be found impossible to make any distinction between primary and secondary qualities, or even to maintain the existence of a material world.

From the account I have given of the various revolutions in the opinions of philosophers about primary and secondary qualities, I think it appears, that all the darkness and intricacy that thinking men have found in this subject, and the errors they have fallen into, have been owing to the difficulty of distinguishing clearly sensation from perception; what we feel from what we perceive.

X. [*The external senses have a double province;* to make us *feel*, and to make us *perceive*. They furnish us with a variety of sensations, some pleasant, others painful, and others indifferent; at the same time they give us a conception, and an invincible belief of the existence of external objects.] This conception of external objects is the work of nature. The belief of their existence, which our senses give, is the work of nature; so likewise is the sensation that accompanies it. This conception and belief which nature produces by means of the senses, we call *perception*. The feeling which goes along with the perception, we call *sensation*. The perception and its corresponding sensation are produced at the same time. In our experience we never find them disjoined. Hence we are led to consider them as one thing, to give them one name, and to confound their different attributes. It becomes very difficult to separate them in thought, to attend to each by itself, and to attribute nothing to it which belongs to the other.

XI. *The operations of our senses slowly analysed,—for two reasons.*—[To do this requires (1) a degree of attention to what passes in our own minds, and a talent of distinguishing things that differ, which is not to be expected in the vulgar, and is even rarely found in philosophers; so that the progress made in a just analysis of the operations of our senses has been very slow. (2) The hypothesis of ideas, so generally adopted, hath, as I apprehend, greatly retarded this progress;] and we might hope for a quicker advance, if philosophers could so far humble themselves as to

believe, that in every branch of the philosophy of nature, the productions of human fancy and conjecture will be found to be dross; and that the only pure metal that will endure the test, is what is discovered by patient observation, and chaste induction.

QUESTIONS FOR EXAMINATION.

Distinction of primary and secondary qualities abolished and revived at various times?

The distinction how far real?

Primary qualities do not resemble our sensations?

In what respect do primary qualities admit of no question?

Contradiction between the philosopher and the vulgar rather apparent than real?

Opinion of the ancient Atomists?

Illustrated by what example?

Locke guilty of an absurd division of our ideas?

He is partly right but partly wrong in treating of the qualities of bodies?

The province of our external senses twofold?

Two causes why the nature of our ideas has been so tardily investigated?

CHAPTER XVIII.

OF OTHER OBJECTS OF PERCEPTION

I. BESIDES primary and secondary qualities of bodies, there are many other immediate objects of perception. Without pretending to a complete enumeration, I think they mostly fall under one or other of the following classes. ☞ *First*, Certain states or conditions of our own bodies. *Second*, Mechanical powers or forces. *Third*, Chemical powers. *Fourth*, Medical powers or virtues. *Fifth*, Vegetable and animal powers.

That we perceive certain disorders in our own bodies by means of uneasy sensations, which nature hath conjoined with them, will not be disputed. Of this kind are toothache, headache, gout, and every distemper and hurt which we feel. [The notions which our sense gives of these, have a strong analogy to our notions of secondary qualities. Both are similarly compounded, and may be similarly resolved, and they give light to each other.]

In the toothache, for instance, there is, *first*, a painful feeling; and, *secondly*, a conception and belief of some disorder in the tooth, which is believed to be the cause of the uneasy feeling. The first of these is a sensation, the second is perception; for it includes a conception and belief of an external object. But these two things, though of different natures, are so constantly conjoined in our experience and in our imagination, that we consider them as one. We give the same name to both; for the toothache is the proper name of the pain we feel; and it is the proper name of the dis-

order in the tooth which causes that pain. If it should be made a question, whether the toothache be in the mind that feels it, or in the tooth that is affected? much might be said on both sides, while it is not observed that the word has two meanings. But a little reflection satisfies us, that the pain is in the mind, and the disorder in the tooth. If some philosopher should pretend to have made a discovery, that the toothache, the gout, the headache, are only sensations in the mind, and that it is a vulgar error to conceive that they are distempers of the body, he might defend his system in the same manner as those, who affirm that there is no sound nor colour nor taste in bodies, defend that paradox. But both these systems, like most paradoxes, will be found to be only an abuse of words.

II. *The sensations that accompany different states of our bodies are different from those of secondary qualities.*—We say that we *feel* the toothache, not that we perceive it. On the other hand, we say that we *perceive* the colour of a body, not that we feel it. Can any reason be given for this difference of phraseology? [In answer to this question, I apprehend, that both when we feel the toothache, and when we see a coloured body, there is sensation and perception conjoined. But, in the toothache, the sensation being very painful, engrosses the attention; and therefore we speak of it, as if it were felt only, and not perceived:] whereas, in seeing a coloured body, the sensation is indifferent, and draws no attention. The quality in the body, which we call its colour, is the only object of attention; and therefore we speak of it, as if it were perceived, and not felt. Though all philosophers agree that in seeing colour there is sensation, it is not easy to persuade the vulgar, that, in seeing a coloured body, when the light is not too strong, nor the eye inflamed, they have any sensation or feeling at all.

There are some sensations, which, though they are very often felt, are never attended to, nor reflected upon. We have no conception of them; and therefore, in language, there is neither any name for them, nor any form of speech that supposes their existence. Such are the sensations of colour, and of all primary qualities; and therefore those qualities are said to be perceived, but not to be felt. Taste and smell, and heat and cold, have sensations that are often agreeable or disagreeable, in such a degree as to draw our attention; and they are sometimes said to be felt, and sometimes to be perceived. When disorders of the body occasion very acute pain, the uneasy sensation engrosses the attention, and they are said to be felt, not to be perceived.

There is another question relating to phraseology, which this subject suggests. A man says, he feels pain in such a particular part of his body; in his toe, for instance. Now, reason assures us, that pain being a sensation, can only be in the sentient being,

as its subject, that is, in the mind. And though philosophers have disputed much about the place of the mind; yet none of them ever placed it in the toe. What shall we say then in this case? do our senses really deceive us, and make us believe a thing which our reason determines to be impossible? I answer, *first*, That, when a man says he has a pain in his toe, he is perfectly understood, both by himself, and those who hear him. This is all that he intends. He really feels what he and all men call a pain in the toe; and there is no deception in the matter. Whether therefore there be any impropriety in the phrase or not, is of no consequence in common life. It answers all the ends of speech, both to the speaker and the hearers.

In all languages, there are phrases which have a distinct meaning; while, at the same time, there may be something in the structure of them that disagrees with the analogy of grammar, or with the principles of philosophy. And the reason is, because language is not made either by grammarians or philosophers. Thus we speak of feeling pain, as if pain was something distinct from the feeling of it. We speak of a pain coming and going, and removing from one place to another. Such phrases are meant by those who use them in a sense that is neither obscure nor false. But the philosopher puts them into his alembic, reduces them to their first principles, draws out of them a sense that was never meant, and so imagines that he has discovered an error of the vulgar.

I observe, *secondly*, That, when we consider the sensation of pain by itself, without any respect to its cause, we cannot say with propriety, that the toe is either the place, or the subject of it. But it ought to be remembered, that when we speak of pain in the toe, the sensation is combined in our thought, with the cause of it, which really is in the toe. The cause and the effect are combined in one complex notion, and the same name serves for both. It is the business of the philosopher to analyse this complex notion, and to give different names to its different ingredients. He gives the name of *pain* to the sensation only, and the name of *disorder* to the unknown cause of it. Then it is evident that the disorder only is in the toe, and that it would be an error to think that the pain is in it. But we ought not to ascribe this error to the vulgar, who never made the distinction, and who under the name of pain comprehend both the sensation and its cause.

III. Cases sometimes happen, which give occasion even to *the vulgar to distinguish the painful sensation from the disorder which is the cause of it.* A man who has had his leg cut off, many years after, feels pain in a toe of that leg. The toe has now no existence; and he perceives easily, that the toe can neither be the place, nor the subject of the pain which he feels: yet it is

the same feeling he used to have from a hurt in the toe; and if he did not know that his leg was cut off, it would give him the same immediate conviction of some hurt or disorder in the toe.

The same phenomenon may lead the philosopher, in all cases, to distinguish sensation from perception. We say, that the man had a deceitful feeling, when he felt a pain in his toe after the leg was cut off; and we have a true meaning in saying so. But, if we will speak accurately, our sensations cannot be deceitful; they must be what we feel them to be, and can be nothing else. Where then lies the deceit? I answer, it lies not in the *sensation*, which is real, but in the *seeming perception* he had of a disorder in his toe. This perception, which nature had conjoined with the sensation, was in this instance fallacious.

The same reasoning may be applied to every phenomenon that can, with propriety, be called a deception of sense. As when one, who has the jaundice, sees a body yellow which is really white; or when a man sees an object double, because his eyes are not both directed to it; in these, and other like cases, the sensations we have are real, and the deception is only in the perception which nature has annexed to them.

Nature has connected our perception of external objects with certain sensations. If the sensation is produced, the corresponding perception follows even when there is no object, and in the case is apt to deceive us. In like manner, nature has connected our sensations with certain impressions that are made upon the nerves and brain: and, when the impression is made, from whatever cause, the corresponding sensation and perception immediately follows. Thus, in the man who feels pain in his toe after the leg is cut off, the nerve that went to the toe, part of which was cut off with the leg, had the same impression made upon the remaining part, which, in the natural state of his body, was caused by a hurt in the toe: and immediately this impression is followed by the sensation and perception which nature connected with it.

In like manner, if the same impressions, which are made at present upon my optic nerves by the objects before me, could be made in the dark, I apprehend that I should have the same sensations, and see the same objects which I now see. The impressions and sensations would in such a case be real, and the perception only fallacious.

IV. *The term "powers" objectionable.*—Let us next consider the notions which our senses give us of those attributes of bodies, called *powers*. This is the more necessary, because power seems to imply some *activity*; yet we consider body as a dead *inactive* thing, which does not act, but may be acted upon.

Of the mechanical powers ascribed to bodies, that which is called their *vis insita*, or *inertia*, may first be considered. By this

is meant, no more than that bodies never change their state of themselves, either from rest to motion, or from motion to rest, or from one degree of velocity, or one direction to another. In order to produce any such change, there must be some force impressed upon them; and the change produced is precisely proportioned to the force impressed, and in the direction of that force.

That all bodies have this property, is a matter of fact, which we learn from daily observation, as well as from the most accurate experiments. Now it seems plain, that this does not imply any activity in body, but rather the contrary. A power in body to change its state, would much rather imply activity than its continuing in the same state: so that, although this property of bodies is called their *vis insita*, or *vis inertiæ*, it implies no proper activity.

If we consider, next, the power of gravity, it is a fact, that all the bodies of our planetary system gravitate towards each other. This has been fully proved by the great Newton. But this gravitation is not conceived by that philosopher to be a power inherent in bodies, which they exert of themselves, but a force impressed upon them, to which they must necessarily yield. Whether this force be impressed by some subtle æther, or whether it be impressed by the power of the Supreme Being, or of some subordinate spiritual being, we do not know; but all sound natural philosophy, particularly that of Newton, supposes it to be an impressed force, and not inherent in bodies.

V. *Passive powers sometimes described by active verbs.*—So that, when bodies gravitate, they do not properly act, but are acted upon. They only yield to an impression that is made upon them. [It is common in language to express, by active verbs, many changes in things, wherein they are merely passive. And this way of speaking is used chiefly *when the cause of the change is not obvious to sense*. Thus we say that a ship sails, when every man of common sense knows that she has no inherent power of motion, and is only driven by wind and tide.] In like manner, when we say that the planets gravitate towards the sun, we mean no more, but that, by some unknown power, they are drawn or impelled in that direction.

What has been said of the power of gravitation may be applied to other mechanical powers, such as cohesion, magnetism, electricity, and no less to chemical and medical powers. By all these, certain effects are produced, upon the application of one body to another. Our senses discover the effect; but the power is latent. We know there must be a cause of the effect, and we form a relative notion of it from its effect; and very often the same name is used to signify the unknown cause, and the known effect.

We ascribe to vegetables the powers of drawing nourishment, growing and multiplying their kind. Here likewise the effect is manifest, but the cause is latent to sense. These powers, therefore, as well as all the other powers we ascribe to bodies, are unknown causes of certain known effects. It is the business of philosophy to investigate the nature of those powers as far as we are able, but our senses leave us in the dark.

VI. *Occult qualities.*—[We may observe a great similarity in the notions which our senses give us of *secondary* qualities, of the *disorders* we feel in our own bodies, and of the various *powers* of bodies which we have enumerated. (1) They are all obscure and relative notions, being a conception of some unknown cause of a known effect. (2) Their names are, for the most part, common to the effect, and to its cause; and (3) they are a proper subject of philosophical disquisition. They might therefore, I think, not improperly, be called *occult* qualities.]

This name, indeed, is fallen into disgrace since the time of Des Cartes. It is said to have been used by the Peripatetics to cloak their ignorance, and to stop all inquiry into the nature of those qualities called *occult*. Be it so. Let those answer for this abuse of the word who were guilty of it. To call a thing occult, if we attend to the meaning of the word, is rather modestly to confess ignorance than to cloak it. It is to point it out as a proper subject for the investigation of philosophers, whose proper business it is to better the condition of humanity, by discovering what was before hid from human knowledge.

VII. *Manifest and occult qualities.*—[Were I therefore to make a division of the qualities of bodies as they appear to our senses, I would divide them first into those that are *manifest*, and those that are *occult*.] The manifest qualities are those which Mr. Locke calls *primary*; such as extension, figure, divisibility, motion, hardness, softness, fluidity. [The nature of these is manifest even to sense; and the business of the philosopher with regard to them, is not to find out their *nature*, which is well known, but to discover *the effects produced by their various combinations*; and with regard to those of them which are not essential to matter, to *discover their causes as far as he is able.*]

[The second class consists of occult qualities, which may be subdivided into various kinds; as, *first*, the *secondary* qualities; *secondly*, the *disorders* we feel in our own bodies; and, *thirdly*, all the qualities which we call *powers of bodies*, whether mechanical, chemical, medical, animal or vegetable; or if there be any other powers not comprehended under these heads. Of all these the existence is manifest to sense, but the *nature* is occult; and here the philosopher has an ample field.]

What is necessary for the conduct of our animal life, the

bountiful Author of nature hath made manifest to all men. But there are many other choice secrets of nature, the discovery of which enlarges the power, and exalts the state of man. These are left to be discovered by the proper use of our rational powers. They are hid, not that they may be always concealed from human knowledge, but that we may be excited to search for them. This is the proper business of a philosopher, and it is the glory of a man, and the best reward of his labour, to discover what nature has thus concealed.

QUESTIONS FOR EXAMINATION.

How do the sensations that accompany different states of our bodies differ from those of secondary qualities?

When are passive powers expressed by verbs active?

Analogy between our notions of secondary qualities, of disorders, and of natural powers?

Reid's division of the qualities of bodies?

Business of the philosopher as to each class?

CHAPTER XIX.

OF MATTER AND OF SPACE.

I. *Berkeley and Hume induced to deny the existence of matter.*—The objects of sense we have hitherto considered are *qualities.* But qualities must have a subject. We give the names of *matter, material substance,* and *body,* to the subject of sensible qualities: and it may be asked, what this *matter* is?

I perceive in a billiard-ball, figure, colour, and motion; but the ball is not figure, nor is it colour, nor motion, nor all them taken together; it is something that has figure, and colour, and motion. This is a dictate of nature, and the belief of all mankind.

As to the nature of this something, I am afraid we can give little account of it, but that it has the qualities which our senses discover.

But how do we know that they are qualities, and cannot exist without a subject? I confess I cannot explain how we know that they cannot exist without a subject, any more than I can explain how we know that they exist. We have the information of nature for their existence; and I think we have the information of nature that they are qualities.

[The belief that figure, motion, and colour, are qualities, and require a subject, must either be (1) a judgment of nature, or (2) it must be discovered by reason, or (3) it must be a prejudice that has no just foundation.] [There are philosophers who

maintain, that it is a mere prejudice; that a body is nothing but a collection of what we call sensible qualities; and that they neither have nor need any subject. This is the opinion of Bishop Berkeley and Mr. Hume; and they were led to it by finding, *that they had not in their minds any idea of substance.* It could neither be an idea of sensation nor of reflection.]

But to me nothing seems more absurd, than that there should be extension without anything extended; or motion without anything moved; yet I cannot give reasons for my opinion, because it seems to me self-evident, and an immediate dictate of my nature.

II. [And that it is *the belief of all mankind*, appears in *the structure of all languages;* in which we find adjective nouns used to express sensible qualities. It is well known that every adjective in language must belong to some substantive expressed or understood; that is, every quality must belong to some subject.]

III. *This belief not the effect of vulgar prejudice.*—☞ Sensible qualities make so great a part of the furniture of our minds, their kinds are so many, and their number so great, that if prejudice, and not nature, teach us to ascribe them all to a subject, it must have a great work to perform, which cannot be accomplished in a short time, nor carried on to the same pitch in every individual. [We should find not individuals only, but nations and ages, differing from each other in the progress which this prejudice had made in their sentiments; but we find no such difference among men. What one man accounts a quality, all men do, and ever did.]

It seems therefore to be a judgment of nature, that the things immediately perceived are qualities, which must belong to a subject; and all the information that our senses give us about this subject, is, that it is that to which such qualities belong. From this it is evident, that our notion of body or matter, as distinguished from its qualities, is a relative notion; and I am afraid it must always be obscure until men have other faculties.

The philosopher in this seems to have no advantage above the vulgar; for as they perceive colour, and figure, and motion by their senses as well as he does, and both are equally certain that there is a subject of those qualities, so the notions which both have of this subject are equally obscure. When the philosopher calls it a *substratum*, and a subject of inhesion, those learned words convey no meaning but what every man understands and expresses, by saying in common language, that it is a thing extended, and solid, and moveable.

IV. [The *relation which sensible qualities bear to their subject*, that is, to body, is not, however, so dark, but that it is easily distinguished from all other relations. Every man can distin-

guish it from the relation of an effect to its cause; of a mean to its end; or of a sign to the thing signified by it.]

I think it requires some ripeness of understanding to distinguish the qualities of a body from the body. Perhaps this distinction is not made by brutes, nor by infants; and if any one thinks that this distinction is not made by our senses, but by some other power of the mind, I will not dispute this point, provided it be granted, that men, when their faculties are ripe, have a natural conviction, that sensible qualities cannot exist by themselves without some subject to which they belong.

V. *A knowledge of the nature of matter not derived solely from the senses.*—I think, indeed, that [some of the determinations we form concerning matter cannot be deduced solely from the testimony of sense, but must be referred to some other source.

There seems to be nothing more evident, than that all bodies must consist of parts; and that every part of a body is a body, and a distinct being which may exist without the other parts; and yet I apprehend this conclusion is not deduced solely from the testimony of sense: for, besides that (1) it is a necessary truth, and therefore no object of sense, there is (2) a limit beyond which we cannot perceive any division of a body.] The parts become too small to be perceived by our senses; but we cannot believe that it becomes then incapable of being further divided, or that such division would make it not to be a body.

VI. *Absurdity of denying the infinite divisibility of matter.*—We carry on the division and subdivision in our thought far beyond the reach of our senses, and we can find no end to it: nay, I think we plainly discern, that there can be no limit beyond which the division cannot be carried.

[For if there be any limit to this division, one of two things must necessarily happen. Either we have come by division to a body which is extended, but has no parts, and is absolutely indivisible; or this body is divisible, but as soon as it is divided, it becomes no body.] Both these positions seem to me absurd, and one or the other is the necessary consequence of supposing a limit to the divisibility of matter.

On the other hand, if it is admitted that the divisibility of matter has no limit, it will follow, that no body can be called one individual substance. You may as well call it two, or twenty, or two hundred. For when it is divided into parts, every part is a being or substance distinct from all the other parts, and was so even before the division: any one part may continue to exist, though all the other parts were annihilated.

VII. *This truth opposed to a metaphysical axiom.*—[There is, indeed, a principle long received, as an axiom in metaphysics, which I cannot reconcile to the divisibility of matter. It is, that every being is one, "omne ens est unum." By which, I suppose,

is meant, that every thing that exists must either be one indivisible being, or composed of *a determinate number* of indivisible beings.] Thus an army may be divided into regiments, a regiment into companies, and a company into men. But here the division has its limit; for you cannot divide a man without destroying him, because he is an individual; and every thing, according to this axiom, must be an individual, or made up of individuals.

That this axiom will hold with regard to an army, and with regard to many other things, must be granted: but I require the evidence of its being applicable to all beings whatsoever.

[Leibnitz, conceiving that all beings must have this metaphysical unity, was by this led to maintain, that matter, and indeed the whole universe, is made up of monads, that is, simple and indivisible substances.

Perhaps the same apprehension might lead Boscovich into his *hypothesis*, which seems much more ingenious; to wit, that matter is composed of a definite number of *mathematical points*, endowed with certain powers of attraction and repulsion.]

VIII. *Metaphysicians distinguish universal attributes of all beings.*—The divisibility of matter without any limit, seems to me more tenable than either of these hypotheses; nor do I lay much stress upon the metaphysical axiom, considering its origin. [Metaphysicians thought proper to make the attributes common to all beings the subject of a science. It must be a matter of some difficulty to find out such attributes: and, after racking their invention, they have specified three, to wit, *unity*, *verity*, and *goodness;* and these, I suppose, have been invented to make a number, rather than from any clear evidence of their being universal.]

There are other determinations concerning matter, which, I think, are not solely founded upon the testimony of sense: such as, that it is impossible that two bodies should occupy the same place at the same time; or that the same body should be in different places at the same time; or that a body can be moved from one place to another, without passing through the intermediate places, either in a straight course, or by some circuit. [These appear to be necessary truths, and therefore cannot be conclusions of our senses; for our senses testify only what is, and not what must necessarily be.]

IX. *How space is perceived.*—[We are next to consider our notion of *space*. It may be observed, that although space be not perceived by any of our senses when all matter is removed; yet, when we perceive any of the primary qualities, space presents itself as a necessary concomitant: for there can neither be extension, nor motion, nor figure, nor division, nor cohesion of parts without space.]

There are only two of our senses by which the notion of space

enters into the mind; to wit, touch and sight. If we suppose a man to have neither of these senses, I do not see how he could ever have any conception of space. Supposing him to have both, until he sees or feels other objects, he can have no notion of space: it has neither colour nor figure to make it an object of sight: it has no tangible quality to make it an object of touch. But other objects of sight and touch carry the notion of space along with them; and not the notion only, but the belief of it: for a body could not exist if there was no space to contain it: it could not move if there was no space: its situation, its distance, and every relation it has to other bodies, suppose space.

X. *Nature of the connexion between our notions of space and of body.*—[But though the notion of space seems not to enter at first into the mind, until it is introduced by the proper objects of sense; yet, being once introduced, it remains in our conception and belief, though the objects which introduced it be removed.] We see no absurdity in supposing a body to be annihilated; but the space that contained it remains; and to suppose that annihilated, seems to be absurd. ☞ It is so much allied to nothing or emptiness, that it seems incapable of annihilation or of creation.

Space not only retains a firm hold of our belief, even when we suppose all the objects that introduced it to be annihilated, but it swells to immensity. We can set no limits to it, either of extent or of duration. Hence we call it immense, eternal, immoveable, and indestructible.

But it is only an immense, eternal, immoveable, and indestructible void or emptiness. Perhaps we may apply to it what the Peripatetics said of their first matter, that whatever it is, it is potentially only, not actually.

XI. *The most confused as well as the clearest deductions drawn from the idea of space.*—[When we consider parts of space that have *measure and figure*, there is nothing we understand better, nothing about which we can reason so clearly, and to so great extent. Extension and figure are *circumscribed* parts of space, and are the object of geometry, a science in which human reason has the most ample field, and can go deeper, and with more certainty than in any other. But when we attempt to comprehend the whole of space, and to trace it to its origin, we lose ourselves in the search.] The profound speculations of ingenious men upon this subject differ so widely, as may lead us to suspect, that the line of human understanding is too short to reach the bottom of it.

Bishop Berkeley, I think, was the first who observed, that the extension, figure, and space, of which we speak in common language, and of which geometry treats, are originally perceived by the sense of touch only; but that there is a notion of extension,

figure, and space, which may be got by sight, without any aid from touch. To distinguish these, he calls the first tangible extension, tangible figure, and tangible space; the last he calls visible.

As I think this distinction very important in the philosophy of our senses, I shall adopt the names used by the inventor to express it; [remembering what has been already observed, that space, whether tangible or visible, is not so properly an *object of sense*, as a necessary *concomitant of the objects* both of sight and touch.]

XII. *Of tangible or visible space.*—The reader may likewise be pleased to attend to this, that [when I use the names of tangible and visible space, I do not mean to adopt Bishop Berkeley's opinion, so far as to think that they are really different things, and altogether unlike. I take them to be different conceptions of the same thing; the one very partial, and the other more complete; but both distinct and just, as far as they reach.]

Thus when I see a spire at a very great distance, it seems like the point of a bodkin; there appears no vane at the top, no angles. But when I view the same object at a small distance, I see a huge pyramid of several angles with a vane on the top. Neither of these appearances is fallacious. Each of them is what it ought to be, and what it must be, from such an object seen at such different distances. These different appearances of the same object may serve to illustrate the different conceptions of space, according as they are drawn from the information of sight alone, or as they are drawn from the additional information of touch.

Our sight alone, unaided by touch, gives a very partial notion of space, but yet a distinct one. When it is considered, according to this partial notion, I call it visible space. The sense of touch gives a much more complete notion of space; and when it is considered according to this notion, I call it tangible space. Perhaps there may be intelligent beings of a higher order, whose conceptions of space are much more complete than those we have from both senses. Another sense added to those of sight and touch, might, for what I know, give us conceptions of space, as different from those we can now attain, as tangible space is from visible; and might resolve many knotty points concerning it, which, from the imperfection of our faculties, we cannot by any labour untie.

Berkeley acknowledges that there is an exact correspondence between the visible figure and magnitude of objects, and the tangible; and that every modification of the one has a modification of the other corresponding. He acknowledges likewise, that nature has established such a connexion between the visible figure and magnitude of an object, and the tangible, that we learn by experience to know the tangible figure and magnitude

from the visible. And having been accustomed to do so from infancy, we get the habit of doing it with such facility and quickness, that we think we see tangible figure, magnitude, and distance of bodies, when, in reality, we only collect those tangible qualities from the corresponding visible qualities, which are natural signs of them.

XIII. ☞ The correspondence and connexion which Berkeley shows to be between the visible figure and magnitude of objects, and their tangible figure and magnitude, is in some respects very similar to that which we have observed between our sensations, and the primary qualities with which they are connected. No sooner is the sensation felt, than immediately we have the conception and belief of the corresponding quality. We give no attention to the sensation; it has not a name; and it is difficult to persuade us that there was any such thing.

XIV. *Visible magnitude but partially noticed before Berkeley pointed it out.*—[In like manner, no sooner is the visible figure and magnitude of an object seen, than immediately we have the conception and belief of the corresponding tangible figure and magnitude. We give no attention to the visible figure and magnitude. It is immediately forgot, as if it had never been perceived; and it has no name in common language; and indeed, until Berkeley pointed it out as a subject of speculation, and gave it a name, it had none among philosophers, *excepting in one instance, relating to the heavenly bodies, which are beyond the reach of touch.*] With regard to them, what Berkeley calls visible magnitude, was, by astronomers, called *apparent* magnitude.

There is surely an apparent magnitude, and an apparent figure of terrestrial objects, as well as of celestial; and this is what Berkeley calls their visible figure and magnitude. But this was never made an object of thought among philosophers, until that author gave it a name, and observed the correspondence and connexion between it and tangible magnitude and figure, and how the mind gets the habit of passing so instantaneously from the visible figure, as a sign, to the tangible figure, as the thing signified by it, that the first is perfectly forgot, as if it had never been perceived.

XV. *Differences between visible and tangible magnitude.*—[Visible figure, extension and space, may be made a subject of mathematical speculation, as well as the tangible. In the visible, we find two dimensions only; in the tangible three. In the one, magnitude is measured by angles; in the other by lines. Every part of visible space bears some proportion to the whole; but tangible space being immense, any part of it bears no proportion to the whole.]

Such differences in their properties led Bishop Berkeley to think, that visible and tangible magnitude and figure, are things

totally different and dissimilar, and cannot both belong to the same object.

And [*upon this dissimilitude is grounded one of the strongest arguments by which his system is supported.* For it may be said, if there be external objects which have a real extension and figure, it must be either tangible extension and figure, or visible, or both. The last appears absurd; nor was it ever maintained by any man, that the same object has two kinds of extension and figure, totally dissimilar. There is then only one of the two really in the object; and the other must be ideal. But no reason can be assigned why the perceptions of one sense should be real, while those of another are only ideal; and he who is persuaded that the objects of sight are ideas only, has equal reason to believe so of the objects of touch.]

This argument, however, loses all its force, if it be true, as was formerly hinted, that visible figure and extension are only a partial conception, and the tangible figure and extension a more complete conception of that figure and extension which is really in the object.

XVI. *Berkeley admits a principle which subverts his theory.* [It has been proved very fully by Bishop Berkeley, that sight alone, without any aid from the informations of touch, gives us no perception, *nor even conception of the distance of any object from the eye.* But he was not aware that this very principle overturns the argument for his system, taken from the difference between visible and tangible extension and figure: for, supposing external objects to exist, and to have that tangible extension and figure which we perceive, it follows demonstrably, from the principle now mentioned, that their visible extension and figure must be just what we see it to be.]

The rules of perspective, and of the projection of the sphere, which is a branch of perspective, are demonstrable. They suppose the existence of external objects, which have a tangible extension and figure; and, upon that supposition, they demonstrate what must be the visible extension and figure of such objects, when placed in such a position, and at such a distance.

[Hence it is evident, that the visible figure and extension of objects is so far from being incompatible with the tangible, that the first is *a necessary consequence* from the last, in beings that see as we do.* The correspondence between them is not arbitrary, like that between words and the thing they signify, as Berkeley thought; but it results necessarily from the nature of the two senses; and this correspondence being always found in experience to be exactly what the rules of perspective show that it ought to be if the senses give true information, *is an argument of the truth of both.*]

* That is, "that cannot judge of distance by sight alone."

QUESTIONS FOR EXAMINATION.

Berkeley and Hume how induced to deny the existence of material substance?

Its belief prevalent amongst mankind, and not the effect of vulgar prejudice?

How far is the relation between qualities and their substratum clear?

Our knowledge of the nature of matter not derived altogether from the senses?

Absurdity of denying the infinite divisibility of matter?

What metaphysical axiom contradicts this truth?

Origin of Leibnitz' indivisible monades?

What universal attributes do metaphysicians ascribe to all beings?

How is space perceived?

How far is our idea of space connected with body?

The clearest as well as the most confused reasonings arise from our idea of space?

How do Berkeley and Reid disagree as to the nature of tangible and visible extension?

How far was visible magnitude observed before Berkeley's time?

Visible and tangible magnitude different?

From this distinction is derived the strongest argument in favour of Berkeley's system?

Principle admitted by Berkeley which is subversive of his theory?

CHAPTER XX.

OF THE EVIDENCE OF SENSE, AND OF BELIEF IN GENERAL.

I. The intention of nature in the powers which we call the external senses, is evident. They are intended to give us that information of external objects which the Supreme Being saw to be proper for us in our present state; and they give to all mankind the information necessary for life, without reasoning, without any art or investigation on our part.

The most uninstructed peasant has as distinct a conception, and as firm a belief of the immediate objects of his senses, as the greatest philosopher; and with this he rests satisfied, giving himself no concern how he came by this conception and belief. But the philosopher is impatient to know how his conception of external objects, and his belief of their existence, is produced. This, I am afraid, is hid in impenetrable darkness. But where there is no knowledge, there is the more room for conjecture; and of this philosophers have always been very liberal.

The dark cave and shadows of Plato, the species of Aristotle, the films of Epicurus, and the ideas and impressions of modern philosophers, are the productions of human fancy, successively invented to satisfy the eager desire of knowing how we perceive external objects; but they are all deficient in the two essential characters of a true and philosophical account of the phenome-

non: for we neither have any evidence of their existence, nor, if they did exist, can it be shown how they would produce perception.

II. It was before observed, that there are *two ingredients in this operation of perception; first*, the conception or notion of the object; and, *secondly*, the belief of its present existence; both are unaccountable.

That we can assign no adequate cause of our first conceptions of things, I think, is now acknowledged by the most enlightened philosophers. We know that such is our constitution, that in certain circumstances we have certain conceptions; but how they are produced, we know no more than how we ourselves were produced.

When we have got the conception of external objects by our senses, we can analyse them in our thought into their simple ingredients; and we can compound those ingredients into various new forms, which the senses never presented. But it is beyond the power of human imagination to form any conception, whose simple ingredients have not been furnished by nature in a manner unaccountable to our understanding.

We have an immediate conception of the operations of our own minds, joined with a belief of their existence; and this we call consciousness. But this is only giving a name to this source of our knowledge. It is not a discovery of its cause. In like manner, we have, by our external senses, a conception of external objects, joined with a belief of their existence; and this we call perception. But this is only giving a name to another source of our knowledge, without discovering its cause.

We know, that when certain impressions are made upon our organs, nerves, and brain, certain corresponding sensations are felt, and certain objects are both conceived and believed to exist. But in this train of operations nature works in the dark. We can neither discover the cause of any one of them, nor any necessary connexion of one with another: and whether they are connected by any necessary tie, or only conjoined in our constitution by the will of Heaven, we know not.

That any kind of impression upon a body should be the efficient cause of sensation, appears very absurd. Nor can we perceive any necessary connexion between sensation and the conception and belief of an external object. For any thing we can discover, we might have been so framed as to have all the sensations we now have by our senses, without any impressions upon our organs, and without any conception of any external object. For any thing we know, we might have been so made as to perceive external objects, without any impressions on bodily organs, and without any of those sensations which invariably accompany perception in our present frame.

III. If our conception of external objects be unaccountable, *the conviction and belief of their existence,* which we get by our senses, is no less so.

Belief, assent, conviction, are words which I think do not admit of logical definition, because the operation of mind signified by them is perfectly simple, and of its own kind. Nor do they need to be defined, because they are common words, and well understood.

Belief must have an object. For he that believes, must believe something; and that which he believes is called the object of his belief. Of this object of his belief, he must have some conception, clear or obscure; for although there may be the most clear and distinct conception of an object without any belief of its existence, there can be no belief without conception.

Belief is always expressed in language by a proposition, wherein something is affirmed or denied. This is the form of speech which in all languages is appropriated to that purpose, and without belief there could be neither affirmation nor denial, nor should we have any form of words to express either. Belief admits of all degrees, from the slightest suspicion to the fullest assurance. These things are so evident to every man that reflects, that it would be abusing the reader's patience to dwell upon them.

IV. *Belief a component part of certain mental operations.*—I proceed to observe, that there are many operations of mind in which, when we analyse them as far as we are able, we find belief to be an essential ingredient. A man cannot be conscious of his own thoughts, without believing that he thinks. He cannot perceive an object of sense, without believing that it exists. He cannot distinctly remember a past event, without believing that it did exist. [Belief therefore is an ingredient in *consciousness,* in *perception,* and in *remembrance.*]

Not only in most of our intellectual operations, but in many of the active principles of the human mind, belief enters as an ingredient. Joy and sorrow, hope and fear, imply a belief of good or ill, either present or in expectation. Esteem, gratitude, pity, and resentment, imply a belief of certain qualities in their objects. In every action that is done for an end, there must be a belief of its tendency to that end. So large a share has belief in our intellectual operations, in our active principles, and in our actions themselves, that as faith in things divine is represented as the mainspring in the life of a Christian, so belief in general is the mainspring in the life of a man.

That men often believe what there is no just ground to believe, and thereby are led into hurtful errors, is too evident to be denied: and, on the other hand, that there are just grounds of belief, can as little be doubted by any man who is not a perfect sceptic.

We give the name of evidence to whatever is a ground of belief. To believe without evidence is a weakness which every man is concerned to avoid, and which every man wishes to avoid. Nor is it in a man's power to believe any thing longer than he thinks he has evidence.

What this evidence is, is more easily felt than described. Those who never reflected upon its nature, feel its influence in governing their belief. It is the business of the logician to explain its nature, and to distinguish its various kinds and degrees; but every man of understanding can judge of it, and commonly judges right, when the evidence is fairly laid before him, and his mind is free from prejudice. A man who knows nothing of the theory of vision, may have a good eye; and a man who never speculated about evidence in the abstract, may have a good judgment.

V. *Different kinds of evidence, and extent of their agreement.*—[The common occasions of life lead us to distinguish evidence into different kinds, to which we give names that are well understood; such as the evidence of *sense*, the evidence of *memory*, the evidence of *consciousness*, the evidence of *testimony*, the evidence of *axioms*, the evidence of *reasoning*. All men of common understanding agree, that each of these kinds of evidence may afford just ground of belief, and they agree very generally in the circumstances that strengthen or weaken them.]

[Philosophers have endeavoured, by analysing the different sorts of evidence, to find out some common nature wherein they all agree, and thereby to reduce them all to one. This was the aim of the schoolmen in their intricate *disputes about the criterion of truth.*] [Des Cartes placed this criterion of truth in clear and *distinct perception*, and laid it down as a maxim, that whatever we clearly and distinctly perceive to be true, is true; but it is difficult to know what he understands by clear and distinct perception in this maxim. Mr. Locke placed it in *a perception of the agreement or disagreement of our ideas*, which perception is immediate in intuitive knowledge, and by the intervention of other ideas in reasoning.]

I confess that, although I have, as I think, a distinct notion of the different kinds of evidence above mentioned, and perhaps of some others, which it is unnecessary here to enumerate, yet I am not able to find any common nature to which they may all be reduced. [They seem to me to agree only in this, that they are all fitted by nature to produce *belief* in the human mind, some of them in the highest degree, which we call certainty, others in various degrees according to circumstances.]

I shall take it for granted, that the evidence of sense, when the proper circumstances concur, is good evidence, and a just ground of belief. My intention in this place is only to compare

it with the other kinds that have been mentioned, that we may judge whether it be reducible to any of them, or of a nature peculiar to itself.

First, It seems to be quite different from the evidence of reasoning. ☞ All good evidence is commonly called reasonable evidence, and very justly, because it ought to govern our belief as reasonable creatures. And, according to this meaning, I think the evidence of sense no less reasonable than that of demonstration. If nature give us information of things that concern us, by other means than by reasoning, reason itself will direct us to receive that information with thankfulness, and to make the best use of it.

VI. *The evidence of sense different from that of reasoning.*—[But when we speak of the evidence of reasoning as a particular kind of evidence, it means the evidence of propositions that are inferred by reasoning, from propositions already known and believed.] Thus the evidence of the fifth proposition of the first book of Euclid's "Elements" consists in this—that it is shown to be the necessary consequence of the axioms, and of the preceding propositions. In all reasoning, there must be one or more premises, and a conclusion drawn from them. And the premises are called the reason why we must believe the conclusion which we see to follow from them.

That the evidence of sense is of a different kind, needs little proof. No man seeks a reason for believing what he sees or feels; and if he did, it would be difficult to find one. But though he can give no reason for believing his senses, his belief remains as firm as if it were grounded on demonstration.

Many eminent philosophers, thinking it unreasonable to believe, when they could not show a reason, have laboured to furnish us with reasons for believing our senses; but their reasons are very insufficient, and will not bear examination. Other philosophers have shown very clearly the fallacy of these reasons, and have, as they imagine, discovered invincible reasons against this belief; but they have never been able either to shake it in themselves, or to convince others. The statesman continues to plod, the soldier to fight, and the merchant to export and import, without being in the least moved by the demonstrations that have been offered of the non-existence of those things about which they are so seriously employed. And a man may as soon, by reasoning, pull the moon out of her orbit, as destroy the belief of the objects of sense.

VII. *And from axiomatic evidence also.*—[Shall we say then that the evidence of sense is the same with that of axioms, or self-evident truths? I answer, *first*, that all modern philosophers seem to agree, that the existence of the objects of sense is not self-evident, because some of them have endeavoured to

prove it by subtile reasoning, others to refute it. Neither of these can consider it as self-evident.]

Secondly, [I would observe, that the word *axiom* is taken by philosophers in such a sense, as that the existence of the objects of sense cannot, with propriety, be called an axiom. They give the name of axiom only to self-evident truths that are *necessary*, and are not limited to time and place, but must be true at all times, and in all places. The truths attested by our senses are not of this kind; they are *contingent*, and limited to time and place.]

Thus, that one is the half of two, is an axiom. It is equally true at all times, and in all places. We perceive, by attending to the proposition itself, that it cannot but be true; and therefore it is called an eternal, necessary, and immutable truth. That there is at present a chair on my right hand, and another on my left, is a truth attested by my senses; but it is not necessary, nor eternal, nor immutable. It may not be true next minute; and therefore, to call it an axiom, would, I apprehend, be to deviate from the common use of the word.

VIII. *Existence of objects of sense when axiomatic.*—*Thirdly*, [If the word axiom be put to signify *every truth which is known immediately*, without being deduced from any antecedent truth, then the existence of the objects of sense may be called an axiom. For my senses give me as immediate conviction of what they testify, as my understanding gives me of what is commonly called an axiom.]

[There is no doubt an analogy between the evidence of sense and the evidence of *testimony*. Hence we find in all languages the analogical expressions of the *testimony of sense*, of giving *credit* to our senses, and the like. But there is a real difference between the two, as well as a similitude. In believing upon testimony, we rely upon the *authority* of a person who testifies: but we have no such authority for believing our senses.]

IX. *In one view our belief in the objects of sense is inspiration.*—[Shall we say then that this belief is the inspiration of the Almighty? I think this may be said in a good sense; for I take *it to be the immediate effect of our constitution*, which is the work of the Almighty. But if inspiration be understood to imply *a persuasion of its coming from God*, our belief of the objects of sense is not inspiration; for a man would believe his senses, though he had no notion of a Deity.] He who is persuaded that he is the workmanship of God, and that it is a part of his constitution to believe his senses, may think that a good reason to confirm his belief: but he had the belief before he could give this or any other reason for it.

X. *Agreement and discrepancy between the evidence of sense and of memory.*—If we compare the evidence of sense with that of memory, we find a great resemblance, but still some difference.

I remember distinctly to have dined yesterday with such a company. What is the meaning of this? It is, that I have a distinct conception and firm belief of this past event; not by reasoning, not by testimony, but immediately from my constitution: and I give the name of memory to that part of my constitution, by which I have this kind of conviction of past events.

I see a chair on my right hand. What is the meaning of this? It is, that I have, by my constitution, a distinct conception and firm belief of the present existence of the chair in such a place, and in such a position; and I give the name of seeing to that part of my constitution, by which I have this immediate conviction. [The two operations agree (1) in the immediate conviction which they give. They agree in this also, (2) that the things believed are not necessary, but contingent, and limited to time and place. But they differ in two respects; *first*, that memory has something for its object that did exist in time *past;* but the object of sight, and of all the senses, must be something which exists at *present*. And, *secondly*, that I see by my eyes, and only when they are directed to the object, and when it is illuminated. But my memory is not limited by any *bodily* organ that I know, nor by light and darkness, though it has its limitations of another kind.]

These differences are obvious to all men, and very reasonably lead them to consider seeing and remembering as operations specifically different. But the nature of the evidence they give has a great resemblance. A like difference and a like resemblance there is between the evidence of sense and that of consciousness, which I leave the reader to trace.

XI. *Locke's definition inadequate.*—[As to the opinion, that evidence consists in a perception of the agreement or disagreement of ideas, we may have occasion to consider it more particularly in another place. Here I only observe, that, when taken in the most favourable sense, it may be applied with propriety to the evidence of reasoning, and to the evidence of some axioms. But I cannot see how, in any sense, it can be applied to the evidence of *consciousness*, to the evidence of *memory*, or to that of the *senses*.]

When I compare the different kinds of evidence above mentioned, I confess, after all, that the evidence of reasoning, and that of some necessary and self-evident truths, seems to be the least mysterious, and the most perfectly comprehended; and therefore I do not think it strange that philosophers should have endeavoured to reduce all kinds of evidence to these.

When I see a proposition to be self-evident and necessary, and that the subject is plainly included in the predicate, there seems to be nothing more that I can desire, in order to understand why I believe it. And when I see a consequence that necessarily

follows from one or more self-evident propositions, I want nothing more with regard to my belief of that consequence. The light of truth so fills my mind in these cases, that I can neither conceive, nor desire any thing more satisfying.

On the other hand, when I remember distinctly a past event, or see an object before my eyes, this commands my belief no less than an axiom. But when, as a philosopher, I reflect upon this belief, and want to trace it to its origin, I am not able to resolve it into necessary and self-evident axioms, or conclusions that are necessarily consequent upon them. I seem to want that evidence which I can best comprehend, and which gives perfect satisfaction to an inquisitive mind; yet it is ridiculous to doubt, and I find it is not in my power. An attempt to throw off this belief, is like an attempt to fly, equally ridiculous and impracticable.

To a philosopher, who has been accustomed to think that the treasure of his knowledge is the acquisition of that reasoning power of which he boasts, it is no doubt humiliating to find, that his reason can lay no claim to the greater part of it.

By his reason, he can discover certain abstract and necessary relations of things: but his knowledge of what really exists, or did exist, comes by another channel, which is open to those who cannot reason. He is led to it in the dark, and knows not how he came by it.

It is no wonder that the pride of philosophy should lead some to invent vain theories, in order to account for this knowledge; and others, who see this to be impracticable, to spurn at a knowledge they cannot account for, and vainly attempt to throw it off, as a reproach to their understanding. But the wise and the humble will receive it as the gift of Heaven, and endeavour to make the best use of it.

QUESTIONS FOR EXAMINATION.

Various kinds of evidence?

(1) Of sense, (2) of memory, (3) of consciousness, (4) of testimony, (5) of axioms, (6) of reasoning?

Whence arise the many disputes about the criterion of truth?

In what does truth consist, according to Des Cartes, and to Locke?

The evidence of sense different from the evidence of reasoning?

And also from the evidence of axioms?

In what sense may certain evidence be called axiomatic?

This evidence not the same as that of testimony?

When may it be called inspiration?

Agreement and disagreement between the evidence of sense and of memory?

Locke's description of the nature of evidence inadequate?

CHAPTER XXI.

OF THE IMPROVEMENT OF THE SENSES

I. *Our senses may be considered in two views; first,* As they afford us agreeable sensations, or subject us to such as are disagreeable; and, *secondly,* As they give us information of things that concern us.

In the *first* view, ☞ *they neither require nor admit of improvement.* Both the painful and the agreeable sensations of our external senses are given by nature for certain ends; and they are given in that degree which is the most proper for their end. By diminishing or increasing them, we should not mend, but mar the work of nature.

Bodily pains are indications of some disorder or hurt of the body, and admonitions to use the best means in our power to prevent or remove their causes. As far as this can be done by temperance, exercise, regimen, or the skill of the physician, every man hath sufficient inducement to do it.

When pain cannot be prevented or removed, it is greatly alleviated by patience and fortitude of mind. While the mind is superior to pain, the man is not unhappy, though he may be exercised. It leaves no sting behind it, but rather matter of triumph and agreeable reflection, when borne properly, and in a good cause. The Canadians have taught us, that even savages may acquire a superiority to the most excruciating pains; and, in every region of the earth, instances will be found, where a sense of duty, of honour, or even of worldly interest, have triumphed over it.

It is evident, that nature intended for man, in his present state, a life of labour and toil, wherein he may be occasionally exposed to pain and danger: and the happiest man is not he who has felt least of those evils, but he whose mind is fitted to bear them by real magnanimity.

II. [Our active and *perceptive powers are improved and perfected by use and exercise.* This is the constitution of nature. But, with regard to the agreeable and disagreeable sensations we have by our senses, *the very contrary is an established constitution of nature:* the frequent repetition of them weakens their force. Sensations at first very disagreeable, by use become tolerable, and at last perfectly indifferent. And those that are at first very agreeable, by frequent repetition become insipid, and at last perhaps give disgust. Nature has set limits to the pleasures of sense, which we cannot pass; and all studied gratification of them, as it is mean and unworthy of a man, so it is foolish and fruitless.]

The man who, in eating and drinking, and in other gratifications of sense, obeys the calls of nature, without affecting delicacies and refinements, has all the enjoyment that the senses can afford. If one could, by a soft and luxurious life, acquire a more delicate sensibility to pleasure, it must be at the expense of a like sensibility to pain, from which he can never promise exemption; and at the expense of cherishing many diseases which produce pain.

III. [*The improvement of our external senses*, as they are the means of giving us information, *is a subject* more *worthy of our attention*:] for although they are not the noblest and most exalted powers of our nature, yet they are not the least useful. [All that we know or can know of the material world, must be grounded upon their information; and the philosopher, as well as the day-labourer, must be indebted to them for the largest part of his knowledge.]

Our perceptions twofold. [Some of our *perceptions by the senses* may be called (1) original, because they require no previous experience or learning; but the far greatest part is (2) acquired, and the fruit of experience.]

Three of our senses, to wit, smell, taste, and hearing, originally give us only certain sensations, and a conviction that these sensations are occasioned by some external object. We give a name to that quality of the object by which it is fitted to produce such a sensation, and connect that quality with the object, and with its other qualities.

Thus we learn, that a certain sensation of smell is produced by a rose; and that quality in the rose, by which it is fitted to produce this sensation, we call the smell of the rose. Here it is evident that the sensation is original. The perception, that the rose has that quality, which we call its smell, is acquired. In like manner, we learn all those qualities in bodies, which we call their smell, their taste, their sound. These are all secondary qualities, and we give the same name to them which we give to the sensations they produce; not from any similitude between the sensation and the quality of the same name, but because the quality is signified to us by the sensation as its sign, and because our senses give us no other knowledge of the quality, but that it is fit to produce such a sensation.

By the other two senses, we have much more ample information. By sight, we learn to distinguish objects by their colour, in the same manner as by their sound, taste, and smell. By this sense, we perceive visible objects to have extension in two dimensions, to have visible figure and magnitude, and a certain angular distance from one another. These, I conceive, are the original perceptions of sight.

By touch, we not only perceive the temperature of bodies as to

heat and cold, which are secondary qualities, but we perceive originally their three dimensions, their tangible figure and magnitude, their linear distance from one another, their hardness, softness, or fluidity. These qualities we originally perceive by touch only; but, by experience, we learn to perceive all or most of them by sight.

We learn to perceive, by one sense, what originally could have been perceived only by another, by finding a connexion between the objects of the different senses. Hence the original perceptions, or the sensations of one sense become signs of whatever has always been found connected with them; and from the *sign* the mind passes immediately to the conception and belief of the *thing signified:* and although the connexion in the mind between the sign, and the thing signified by it, be the effect of custom, this custom becomes a second nature, and it is difficult to distinguish it from the original power of perception.

[Thus, if a sphere of one uniform colour be set before me, I perceive evidently by my eye its spherical figure, and its three dimensions. All the world will acknowledge, that by sight only, without touching it, I may be certain that it is a sphere; yet it is no less certain, that, by the original power of sight, I could not perceive it to be a sphere, and to have three dimensions. The eye originally could only perceive two dimensions, and a gradual variation of colour on the different sides of the object.*]

It is experience that teaches me that the variation of colour is an effect of spherical convexity, and of the distribution of light and shade. But so rapid is the progress of the thought, from the effect to the cause, that we attend only to the last, and can hardly be persuaded that we do not immediately see the three dimensions of the sphere.

IV. *The appearance altered into the cause.*—[Nay, it may be observed, that, in this case, the acquired perception in a manner *effaces* the original one; for the sphere is seen to be of *one uniform colour,* though originally there would have appeared a gradual variation of colour: but that apparent variation, we learn to interpret as the effect of light and shade falling upon a sphere of one uniform colour.]

A sphere may be painted upon a plane, so exactly, as to be taken for a real sphere, when the eye is at a proper distance, and in the proper point of view. We say in this case, that the eye is deceived, that the appearance is fallacious: ☞ but there is no fallacy in the original perception, but only in that which is acquired by custom. The variation of colour, exhibited to the eye by the painter's art, is the same which nature exhibits by the

* This change of ideas of sensation by the judgment is fully proved by *Molyneux' Problem,* which Mr. Locke has introduced into his Essay, Book ii. chap. ix. sect. 8.

different degrees of light falling upon the convex surface of a sphere.

V. *Sensations the signs of perception.*—[In perception, whether original or acquired, there is something which may be called the sign, and something which is signified to us, or brought to our knowledge by that sign.

In original perception, the signs are the various *sensations* which are produced by the impressions made upon our organs. The things signified, are the objects perceived in consequence of those sensations, by the *original constitution of our nature.*]

Thus, when I grasp an ivory ball in my hand, I have a certain sensation of touch. Although this sensation be in the mind, and have no similitude to anything material, yet, by the laws of my constitution, it is immediately followed by the conception and belief, that there is in my hand a hard smooth body of a spherical figure, and about an inch and a-half in diameter. ☞ This belief is grounded neither upon reasoning nor upon experience; it is the immediate effect of my constitution, and this I call original perception.

VI. *In acquired perceptions the sign twofold.*—[In acquired perception, the sign may be (1) either a sensation, or (2) something originally perceived. The thing signified, is something, which, *by experience*, has been found connected with that sign.]

VII. *Distance not an object of vision.*—Thus, when the ivory ball is placed before my eye, I perceive by sight what I before perceived by touch, that the ball is smooth, spherical, of such a diameter, and at such a distance from the eye: and to this is added the perception of its colour. All these things I perceive by sight distinctly, and with certainty; yet it is certain, from principles of philosophy, that if I had not been accustomed to compare the informations of sight with those of touch, I should not have perceived these things by sight. I should have perceived a circular object, having its colour gradually more faint towards the shaded side. But I should not have perceived it to have three dimensions, to be spherical, to be of such a linear magnitude, and at such a distance from the eye. [That these last mentioned are not original perceptions of sight, but acquired by experience, is sufficiently evident from the principles of optics, and from the art of painters, in painting objects of three dimensions, upon a plane which has only two. And it has been put beyond all doubt, by observations recorded of several persons, who having, by cataracts in their eyes, been deprived of sight from their infancy, have been couched and made to see, after they came to years of understanding.]

Those who have had their eyesight from infancy, acquire such perceptions so early, that they cannot recollect the time when they had them not, and therefore make no distinction between

them and their original perceptions; nor can they be easily persuaded, that there is any just foundation for such a distinction. In all languages men speak with equal assurance of their seeing objects to be spherical or cubical, as of their feeling them to be so; nor do they ever dream, that these perceptions of sight were not as early and original as the perceptions they have of the same objects by touch.

This power which we acquire of perceiving things by our senses, which originally we should not have perceived, is not the effect of any reasoning on our part: it is the result of our constitution, and of the situations in which we happen to be placed.

VIII. *Belief, that this connexion is founded in nature, constitutional.*—We are so made, that when two things are found to be conjoined in certain circumstances, *we are prone to believe that they are connected by nature*, and will always be found together in like circumstances. [The belief which we are led into in such cases is not the effect of reasoning, nor does it arise from intuitive evidence in the thing believed; it is, as I apprehend, the immediate effect of our constitution. Accordingly it is strongest in infancy, before our reasoning power appears, before we are capable of drawing a conclusion from premises. A child who has once burnt his finger in a candle, from that single instance connects the pain of burning with putting his finger in the candle, and believes that these two things must go together. It is obvious, that this part of our constitution is of very great use before we come to the use of reason, and guards us from a thousand mischiefs, which, without it, we would rush into; it may sometimes lead us into error, but the good effects of it far overbalance the ill.]

It is, no doubt, the perfection of a rational being to have no belief but what is grounded on intuitive evidence, or on just reasoning: but man, I apprehend, is not such a being; nor is it the intention of nature that he should be such a being, in every period of his existence. We come into the world without the exercise of reason; we are merely animal before we are rational creatures; and it is necessary for our preservation, that we should believe many things before we can reason. How then is our belief to be regulated before we have reason to regulate it? has nature left it to be regulated by chance? By no means. It is regulated by certain principles, which are parts of our constitution; whether they ought to be called animal principles, or instinctive principles, or what name we give to them, is of small moment; but they are certainly different from the faculty of reason; they do the office of reason while it is in its infancy, and must, as it were, be carried in a nurse's arms, and they are leading-strings to it in its gradual progress.

From what has been said, I think it appears, that our original powers of perceiving objects by our senses receive great improvement by use and habit; and without this improvement, would be altogether insufficient for the purposes of life. The daily occurrences of life not only add to our stock of knowledge, but give additional perceptive powers to our senses; and time gives us the use of our eyes and ears, as well as of our hands and legs.

IX. This is [*the greatest and most important improvement of our external senses.*] It is to be found in all men come to years of understanding, but is various in different persons according to their different occupations; and the different circumstances in which they are placed. Every artist acquires an eye as well as a hand in his own profession: his eye becomes skilled in perceiving, no less than his hand in executing, what belongs to his employment.

X. *Artificial improvements of our senses.*— ☞ Besides this improvement of our senses, which *nature* produces without our intention, there are various ways in which they may be improved, or their defects remedied *by art.* As, *first*, by a due care of the organs of sense, that they be in a *sound* and natural state. This belongs to the department of the medical faculty.

Secondly, by accurate attention to the objects of sense. The effects of such attention in improving our senses appear ☞ *in every art.* The artist, by giving more attention to certain objects than others do, by that means perceives many things in those objects which others do not. ☞ Those who happen to be deprived of one sense, frequently supply that defect in a great degree, by giving more accurate attention to the objects of the senses they have. The blind have often been known to acquire uncommon acuteness in distinguishing things by feeling and hearing; and the deaf are uncommonly quick in reading men's thoughts in their countenance.

A *third* way in which our senses admit of improvement, is, by ☞ additional organs or instruments contrived by art. By the invention of optical glasses, and the gradual improvement of them, the natural power of vision is wonderfully improved, and a vast addition made to the stock of knowledge which we acquire by the eye. By speaking-trumpets and ear-trumpets, some improvement has been made in the sense of hearing. Whether by similar inventions the other senses may be improved, seems uncertain.

A *fourth* method by which the information got by our senses may be improved, is, by discovering ☞ the connexion which nature hath established between the sensible qualities of objects and their more latent qualities.

By the sensible qualities of bodies, I understand those that are

perceived immediately by the senses, such as their colour, figure, feeling, sound, taste, smell. The various modifications, and various combinations of these, are innumerable; so that there are hardly two individual bodies in nature that may not be distinguished by their sensible qualities.

The latent qualities are such as are not immediately discovered by our senses; but discovered, sometimes by accident, sometimes by experiment or observation. The most important part of our knowledge of bodies, is the knowledge of the latent qualities of the several species, by which they are adapted to certain purposes, either for food, or medicine, or agriculture, or for the materials or utensils of some art or manufacture.

I am taught, that certain species of bodies have certain latent qualities; but how shall I know that this individual is of such a species? This must be known by the sensible qualities which characterise the species. I must know that this is bread, and that wine, before I eat the one or drink the other. I must know that this is rhubarb, and that opium, before I use the one or the other for medicine.

XI. *Knowledge of bodies twofold, and subservient to a twofold object.*—[It is one branch of human knowledge to know the names of the various species of natural and artificial bodies, and to know the sensible qualities by which they are ascertained to be of such a species, and *by which they are distinguished from one another.* It is another branch of knowledge to know the latent qualities of the several species, and *the uses to which they are subservient.*]

The man who possesses both these branches, is informed by his senses of innumerable things of real moment, which are hid from those who possess only one, or neither. This is an improvement in the information got by our senses, which must keep pace with the improvements made in natural history, in natural philosophy, and in the arts.

XII. *Fifth mode of improving the senses.*—[It would be *an improvement still higher,* if we were able to discover any connexion between the *sensible* qualities of bodies and their *latent qualities, without knowing the species,* or what may have been discovered with regard to it.]

Some philosophers of the first rate have made attempts towards this noble improvement, not without promising hopes of success. Thus the celebrated Linnæus has attempted to point out certain sensible qualities by which a plant may very probably be concluded to be poisonous, without knowing its name or species. He has given several other instances, wherein certain medical and economical virtues of plants are indicated by their external appearances. Sir Isaac Newton hath attempted to show, that from the colours of bodies we may form a probable conjecture

of the size of their constituent parts, by which the rays of light are reflected.

No man can pretend to set limits to the discoveries that may be made by human genius and industry, of such connexions between the latent and the sensible qualities of bodies. A wide field here opens to our view, whose boundaries no man can ascertain, of improvements that may hereafter be made in the information conveyed to us by our senses.

QUESTIONS FOR EXAMINATION.

Our senses may be considered in two ways?
The improvement of our external senses deserving of our attention?
Perceptions twofold?
How does acquired efface original perception?
What are the signs in original perception—what in acquired?
Distance not properly an object of vision?
The connexion between the sign and thing signified the immediate effect of our constitution?
Most important improvement of our senses?
Artificial remedies or improvements?
The knowledge of bodies twofold, and serves a twofold purpose?
The greatest improvement in our knowledge of bodies?

CHAPTER XXII.

OF THE FALLACY OF THE SENSES.

1. *Philosophers, in all ages, have complained of the fallacy of the senses.*—COMPLAINTS of the fallacy of the senses have been very common in ancient and in modern times, especially among the philosophers. And if we should take for granted all that they have said on this subject, the natural conclusion from it might seem to be, that the senses are given to us by some malignant demon on purpose to delude us, rather than that they are formed by the wise and beneficent Author of nature, to give us true information of things necessary to our preservation and happiness.

[The whole sect of atomists among the ancients, led by Democritus, and afterwards by Epicurus, maintained, that all the qualities of bodies which the moderns call secondary qualities, to wit, smell, taste, sound, colour, heat and cold, are mere illusions of sense, and have no real existence. Plato maintained, that we can attain no real knowledge of material things; and that eternal and immutable ideas are the only objects of real knowledge. The Academics and Sceptics anxiously sought for arguments to prove the fallaciousness of our senses, in order to support their favourite doctrine, that even in things that seem most evident, we ought to withhold assent.]

II. *This complaint a mere subterfuge*—Among the Peripatetics we find frequent complaints that the senses often deceive us, and that their testimony is to be suspected, when it is not confirmed by reason, by which the errors of sense may be corrected. This complaint they supported by many common-place instances; such as the crooked appearance of an oar in water; objects being magnified, and their distance mistaken in a fog; the sun and moon appearing about a foot or two in diameter, while they are really thousands of miles; a square tower being taken at a distance to be round. These, and many similar appearances, they thought to be sufficiently accounted for from the fallacy of the senses; and [thus the fallacy of the senses was used as a decent cover to conceal their ignorance of the real causes of such phenomena, and served the same purpose as their occult qualities and substantial forms.]

III. *The Cartesian opinion as to the evidence of the senses not consistent with the idea of the goodness of God.*—Des Cartes and his followers joined in the same complaint. Antony le Grand, a philosopher of that sect, in the first chapter of his logic, expresses the sentiments of the sect as follows: "Since all our senses are fallacious, and we are frequently deceived by them, common reason advises, that we should not put too much trust in them, nay, that we should suspect falsehood in everything they represent; for it is imprudence and temerity to trust to those who have but once deceived us; and if they err at any time, they may be believed always to err. They are given by nature for this purpose only, to warn us of what is useful and what is hurtful to us. The order of nature is perverted when we put them to any other use, and apply them for the knowledge of truth."

When we consider, that the active part of mankind, in all ages from the beginning of the world, have rested their most important concerns upon the testimony of sense, it will be very difficult to reconcile their conduct with the speculative opinion so generally entertained of the fallaciousness of the senses. [And it seems to be a very unfavourable account of the workmanship of the Supreme Being, to think that he has given us one faculty to deceive us, to wit, our senses, and another faculty, to wit, our reason, to detect the fallacy.]

It deserves, therefore, to be considered, whether the fallaciousness of our senses be not a common error, which men have been led into, from a desire to conceal their ignorance, or to apologise for their mistakes.

IV. *Our senses not fallacious in sensation.*—[There are two powers which we owe to our external senses, sensation, and the perception of external objects.

It is impossible that there can be any fallacy in sensation: for

we are conscious of all our sensations, and they can neither be any other in their nature, nor greater or less in their degree than we feel them.] It is impossible that a man should be in pain, when he does not feel pain; and when he feels pain, it is impossible that his pain should not be real, and in its degree what it is felt to be; and the same thing may be said of every sensation whatsoever. An agreeable or an uneasy sensation may be forgot when it is past, but when it is present, it can be nothing but what we feel.

☞ If, therefore, there be any fallacy in our senses, it must be in the perception of external objects, which we shall next consider.

And here I grant that we can conceive powers of perceiving external objects more perfect than ours, which, possibly, beings of a higher order may enjoy. We can perceive external objects only by means of bodily organs; and these are liable to various disorders, which sometimes affect our powers of perception. The nerves and brain, which are interior organs of perception, are likewise liable to disorders, as every part of the human frame is.

The imagination, the memory, the judging and reasoning powers, are all liable to be hurt, or even destroyed, by disorders of the body, as well as our powers of perception; but we do not on this account call them fallacious.

Our senses, our memory, and our reason, are all limited and imperfect: this is the lot of humanity: but they are such as the Author of our being saw to be best fitted for us in our present state. [Superior natures may have intellectual powers which we have not, or such as we have, in a more *perfect* degree, and less liable to accidental disorders: but we have no reason to think that God has given *fallacious* powers to any of his creatures:] this would be to think dishonourably of our Maker, and would lay a foundation for universal scepticism.

V. *Supposed fallacies of the senses reducible to four classes.*—The appearances commonly imputed to the fallacy of the senses are many, and of different kinds; but I think they may be reduced to the four following classes.

First, [Many things called deceptions of the senses are only *conclusions rashly drawn from the testimony of the senses.* In these cases the testimony of the senses is true, but we rashly draw a conclusion from it, which does not necessarily follow. We are disposed to impute our errors rather to false information than to inconclusive reasoning, and to blame our senses for the wrong conclusions we draw from their testimony.]

☞ Thus, when a man has taken a counterfeit guinea for a true one, he says his senses deceived him; but he lays the blame where it ought not to be laid: for we may ask him, did your senses give a false testimony of the colour, or of the figure, or

of the impression? No. But this is all that they testified, and this they testified truly: from these premises you concluded that it was a true guinea, but this conclusion does not follow; you erred therefore, not by relying upon the testimony of sense, *but by judging rashly from its testimony:* [not only are your senses innocent of this error, but it is only by their information that it can be discovered. If you consult them properly, they will inform you that what you took for a guinea is base metal, or is deficient in weight, and this can only be known by the testimony of sense.]

I remember to have met with a man who thought the argument used by Protestants against the Popish doctrine of transubstantiation, from the testimony of our senses, inconclusive; because, said he, instances may be given where several of our senses may deceive us: how do we know then that there may not be cases wherein they all deceive us, and no sense is left to detect the fallacy? I begged of him to show an instance wherein several of our senses deceive us. I take, said he, a piece of soft turf, I cut it into the shape of an apple; with the essence of apples I give it the smell of an apple; and with paint, I can give it the skin and colour of an apple. Here then is a body, which, if you judge by your eye, by your touch, or by your smell, is an apple.

To this I would answer, that no one of our senses deceives us in this case. My sight and touch testify that it has the shape and colour of an apple: this is true. The sense of smelling testifies that it has the smell of an apple: this is likewise true, and is no deception. Where then lies the deception? It is evident it lies in this, that because this body has some qualities belonging to an apple, I conclude that it is an apple. This is a fallacy, not of the senses, but of inconclusive reasoning.

Many false judgments that are accounted deceptions of sense, arise from our mistaking relative motion for real or absolute motion. These can be no deceptions of sense, because by our senses we perceive only the relative motions of bodies; and it is by reasoning that we infer the real from the relative which we perceive. A little reflection may satisfy us of this.

It was before observed, that we perceive extension to be one sensible quality of bodies, and thence are necessarily led to conceive space, though space be of itself no object of sense. When a body is removed out of its place, the space which it filled remains empty till it is filled by some other body, and would remain if it should never be filled. Before any body existed, the space which bodies now occupy was empty space, capable of receiving bodies; for no body can exist where there is no space to contain it. There is space therefore wherever bodies exist, or can exist.

Hence it is evident that space can have no limits. It is no less evident that it is immoveable. Bodies placed in it are moveable, but the place where they were cannot be moved; and we can as easily conceive a thing to be moved from itself, as one part of space brought nearer to, or removed farther from another.

This space therefore which is unlimited and immoveable, is called by philosophers *absolute space*. Absolute or real motion is a change of place in absolute space.

Our senses do not testify the absolute motion or absolute rest of any body. When one body removes from another, this may be discerned by the senses; but whether any body keeps the same part of absolute space, we do not perceive by our senses: when one body seems to remove from another, we can infer with certainty that there is absolute motion, but whether in the one or the other, or partly in both, is not discerned by sense.

VI. *Errors respecting apparent motions not attributable to our senses.*—Of all the prejudices which philosophy contradicts, I believe there is none so general as that the earth keeps its place unmoved. This opinion seems to be universal, till it is corrected by instruction, or by philosophical speculation. Those who have any tincture of education are not now in danger of being held by it, but they find at first a reluctance to believe that there are antipodes; that the earth is spherical, and turns round its axis every day, and round the sun every year: they can recollect the time when reason struggled with prejudice upon these points, and prevailed at length, but not without some effort.

The cause of a prejudice so very general is not unworthy of investigation. But that is not our present business. [It is sufficient to observe, that it cannot justly be called a fallacy of sense; because our senses testify only the change of situation of one body in relation to other bodies, and not its change of situation in absolute space. It is only the *relative* motion of bodies that we perceive, and that, we perceive truly. It is the province of reason and philosophy, from the relative motions which we perceive, to collect the real and absolute motions which produce them.]

All motion must be estimated from some point or place which is supposed to be at rest. We perceive not the points of absolute space, from which real and absolute motion must be reckoned: and there are obvious reasons that lead mankind in the state of ignorance, to make the earth the fixed place from which they may estimate the various motions they perceive. ☞ The custom of doing this from infancy, and of using constantly a language which supposes the earth to be at rest, may perhaps be the cause of the general prejudice in favour of this opinion.

[Thus it appears, that if we distinguish accurately between what our senses *really and naturally* testify, and the *conclusions*

which we draw from their testimony by reasoning, we shall find many of the errors, called fallacies of the senses, to be no fallacy of the senses, but rash judgments, which are not to be imputed to our senses.]

[*Secondly*, Another class of errors imputed to the fallacy of the senses, are *those to which we are liable in our acquired perceptions.*] Acquired perception is not properly the testimony of those senses which God hath given us, but a conclusion drawn from what the senses testify. In our past experience, we have found certain things conjoined with what our senses testify. We are led by our constitution to expect this conjunction in time to come; and when we have often found it in our experience to happen, we acquire a firm belief, that the things which we have found thus conjoined are connected in nature, and that one is a sign of the other. The appearance of the sign immediately produces the belief of its usual attendant, and we think we perceive the one as well as the other.

That such conclusions are formed even in infancy, no man can doubt; nor is it less certain that they are confounded with the natural and immediate perceptions of sense, and in all languages are called by the same name. We are therefore authorised by language to call them perception, and must often do so, or speak unintelligibly. But philosophy teaches us in this, as in many other instances, to distinguish things which the vulgar confound. I have therefore given the name of acquired perception to such conclusions, to distinguish them from what is naturally, originally, and immediately testified by our senses. [Whether this acquired perception is to be resolved into some *process of reasoning*, of which we have lost the remembrance, as some philosophers think, or whether it results from *some part of our constitution distinct from reason*, as I rather believe, does not concern the present subject. If the first of these opinions be true, the errors of acquired perception will fall under the first class before mentioned. If not, it makes a distinct class by itself.] But whether the one or the other be true, it must be observed, that the errors of acquired perception are not properly fallacies of our senses.

Thus when a globe is set before me, I perceive by my eyes that it has three dimensions and a spherical figure. To say that this is not perception, would be to reject the authority of custom in the use of words, which no wise man will do: but that it is not the testimony of my sense of seeing, every philosopher knows. I see only a circular form, having the light and colour distributed in a certain way over it. But being accustomed to observe this distribution of light and colour only in a spherical body, I immediately, from what I see, believe the object to be spherical, and say that I see or perceive it to be spherical. When a painter, by an exact imitation of that distribution

of light and colour, which I have been accustomed to see only in a real sphere, deceives me, so as to make me take that to be a real sphere, which is only a painted one, the testimony of my eye is true; the colour and visible figure of the object is truly what I see it to be: the error lies in the conclusion drawn from what I see, to wit, that the object has three dimensions and a spherical figure. The conclusion is false in this case; but whatever be the origin of this conclusion, it is not properly the testimony of sense.

To this class we must refer the judgments we are apt to form of the distance and magnitude of the heavenly bodies, and of terrestrial objects seen on high. The mistakes we make of the magnitude and distance of objects seen through optical glasses, or through an atmosphere uncommonly clear, or uncommonly foggy, belong likewise to this class.

The errors we are led into in acquired perception are very rarely hurtful to us in the conduct of life; they are gradually corrected by a more enlarged experience, and a more perfect knowledge of the laws of nature: and the general laws of our constitution, by which we are sometimes led into them, are of the greatest utility.

We come into the world ignorant of every thing, and by our ignorance exposed to many dangers and to many mistakes. The regular train of causes and effects, which Divine Wisdom has established, and which directs every step of our conduct in advanced life, is unknown, until it is gradually discovered by experience.

We must learn much from *experience* before we can reason, and therefore must be liable to many errors. Indeed, I apprehend, that, in the first part of life, reason would do us much more hurt than good. Were we sensible of our condition in that period, and capable of reflecting upon it, we should be like a man in the dark, surrounded with dangers, where every step he takes may be into a pit. Reason would direct him to sit down, and wait till he could see about him.

In like manner, if we suppose an infant endowed with reason, it would direct him to do nothing, till he knew what could be done with safety. This he can only know by experiment, and experiments are dangerous. Reason directs, that experiments that are full of danger should not be made without a very urgent cause. It would therefore make the infant unhappy, and hinder his improvement by experience.

Nature has followed another plan. The child, unapprehensive of danger, is led by instinct to exert all his active powers, to try every thing without the cautious admonitions of reason, and to believe everything that is told him. Sometimes he suffers by his rashness what reason would have prevented: but his suffering proves a salutary discipline, and makes him for the future

avoid the cause of it. Sometimes he is imposed upon by his credulity; but it is of infinite benefit to him upon the whole. His activity and credulity are more useful qualities, and better instructors than reason would be; they teach him more in a day than reason would do in a year; they furnish a stock of materials for reason to work upon; they make him easy and happy in a period of his existence, when reason could only serve to suggest a thousand tormenting anxieties and fears: and he acts agreeably to the constitution and intention of Nature, even when he does and believes what reason would not justify. So that the wisdom and goodness of the Author of nature is no less conspicuous in withholding the exercise of our reason in this period, than in bestowing it when we are ripe for it.

VII. *These fallacies are in reality false judgments.*—[A *third* class of errors, *ascribed to the fallacy of the senses,* proceeds from *ignorance of the laws of nature.*]

The laws of nature (I mean not moral but physical laws) are learned ☞ *either from our own experience, or the experience of others,* who have had occasion to observe the course of nature.

Ignorance of those laws, or inattention to them, is apt to occasion false judgments with regard to the objects of sense, ☞ especially those of *hearing* and of *sight;* which false judgments are often, without good reason, called fallacies of sense.

Sounds affect the ear differently, according as the sounding body is before or behind us, on the right hand or on the left, near or at a great distance. We learn, by the manner in which the sound affects the ear, on what hand we are to look for the sounding body; and in most cases we judge right. But we are sometimes deceived by echoes or by whispering galleries, or speaking trumpets, which return the sound, or alter its direction, or convey it to a distance without diminution.

The deception is still greater, because more uncommon, which is said to be produced by gastriloquists, that is, persons who have acquired the art of modifying their voice, so that it shall affect the ear of the hearers, as if it came from another person, or from the clouds, or from under the earth.

I never had the fortune to be acquainted with any of these artists, and therefore cannot say to what degree of perfection the art may have been carried.

I apprehend it to be only such an imperfect imitation as may deceive those who are inattentive, or under a panic. For if it could be carried to perfection, a gastriloquist would be as dangerous a man in society as was the shepherd Gyges, who, by turning a ring upon his finger, could make himself invisible, and by that means, from being the king's shepherd, became king of Lydia.

If the gastriloquists have all been too good men to use their talents to the detriment of others, it might at least be expected

that some of them should apply it to their own advantage. If it could be brought to any considerable degree of perfection, it seems to be as proper an engine for drawing money by the exhibition of it, as legerdemain or rope-dancing. But I have never heard of any exhibition of this kind, and therefore am apt to think that it is too coarse an imitation to bear exhibition even to the vulgar.

Some are said to have the art of imitating the voice of another so exactly, that in the dark they might be taken for the person whose voice they imitate. I am apt to think, that this art also, in the relations made of it, is magnified beyond the truth, as wonderful relations are apt to be, and that an attentive ear would be able to distinguish the copy from the original.

VIII. *Remarkable proof of the acuteness of our senses.*—[It is indeed a wonderful instance of the accuracy as well as of the truth of our senses, in things that are of real use in life, that we are able to distinguish all our acquaintance by their countenance, by their voice, and by their hand-writing, *when at the same time we are often unable to say by what minute difference the distinction is made:* and that we are so very rarely deceived in matters of this kind, when we give proper attention to the informations of sense.]

However, if any case should happen, in which sounds produced by different causes are not distinguishable by the ear, this may prove that our senses are imperfect, but not that they are *fallacious.* The ear may not be able to draw the just conclusion, but it is only our ignorance of the laws of sound that leads us to a wrong conclusion.

Deceptions of sight, arising from ignorance of the laws of nature are more numerous, and more remarkable than those of hearing.

The rays of light, which are the means of seeing, pass in right lines from the object to the eye, when they meet with no obstruction; and we are by nature led to conceive the visible object to be in the direction of the rays that come to the eye. But the rays may be reflected, refracted, or inflected in their passage from the object to the eye, according to certain fixed laws of nature, by which means their direction may be changed, and consequently the apparent place, figure, or magnitude of the object.

Thus a child seeing himself in a mirror, thinks he sees another child behind the mirror, that imitates all his motions. But even a child soon gets the better of this deception, and knows that he sees himself only.

All the deceptions made by telescopes, microscopes, camera obscuras, magic lanterns, are of the same kind, though not so familiar to the vulgar. The ignorant may be deceived by them; but to those who are acquainted with the principles of optics,

they give just and true information, and the laws of nature by which they are produced are of infinite benefit to mankind.

IX. *This last class of errors affords no just ground for disbelieving our senses.*—[There remains another class of errors, commonly called deceptions of sense, and the only one, as I apprehend, to which that name can be given with propriety: I mean such as proceed from some disorder or preternatural state, either of the external organ, or of the nerves and brain, which are internal organs of perception.]

In a delirium, or in madness, perception, memory, imagination, and our reasoning powers, are strangely disordered and confounded. There are likewise disorders which affect some of our senses, while others are sound. Thus, a man may feel pain in his toes after the leg is cut off. He may feel a little ball double, by crossing his fingers. He may see an object double, by not directing both eyes properly to it. By pressing the ball of his eye, he may see colours that are not real. By the jaundice in his eyes, he may mistake colours. These are more properly deceptions of sense than any of the classes before mentioned.

[We must acknowledge it to be the lot of human nature, that *all the human faculties* are liable, by accidental causes, to be hurt and unfitted for their natural functions, either wholly or in part: but as this imperfection is common to them *all*, it gives no just ground for accounting any one of them fallacious more than another.]

X. *Twofold error of philosophers in impugning the testimony* of our senses.—[Upon the whole, it seems to have been (1) a common error of philosophers to account the senses fallacious. And to this error they have added another, (2) that one use of reason is to detect the fallacies of sense.]

It appears, I think, from what has been said, that there is no more reason to account our senses fallacious, than our reason, our memory, or any other faculty of judging which nature hath given us. They are all limited and imperfect; but wisely suited to the present condition of man. We are liable to error and wrong judgment in the use of them all; but as little in the informations of sense as in the deductions of reasoning. [And the errors we fall into with regard to objects of sense are not corrected by reason, but by more accurate attention *to the informations we may receive by our senses themselves.*]

XI. *Probable origin of complaints against the veracity of the senses.*—[Perhaps the pride of philosophers may have given occasion to this error. Reason is the faculty wherein they assume a superiority to the unlearned. The informations of sense are common to the philosopher and to the most illiterate: they put all men upon a level; and therefore are apt to be undervalued.] We must, however, be beholden to the informations of sense for

the greatest and most interesting part of our knowledge. The wisdom of nature has made the most useful things most common, and they ought not to be despised on that account. Nature likewise forces our belief in those informations, and all the attempts of philosophy to weaken it are fruitless and vain.

XII. *These complaints inconsistent with the philosophic theory of ideas.*—[I add only one observation to what has been said upon this subject. It is, that there seems to be a contradiction between what philosophers teach concerning ideas, and their doctrine of the fallaciousness of the senses. We are taught that the office of the senses is *only to give us the ideas of external objects.* If this be so, there can be no fallacy in the senses. Ideas can neither be true nor false. If the senses testify nothing, they cannot give false testimony.] If they are not judging faculties, no judgment can be imputed to them, whether false or true. There is, therefore, a contradiction between the common doctrine concerning ideas and that of the fallaciousness of the senses. Both may be false, as I believe they are, but both cannot be true.

QUESTIONS FOR EXAMINATION.

Different sects of philosophers have complained of the fallacy of the senses?

Peripatetics' ground of complaint?

Des Cartes' supposition as to the senses?

This opinion not consistent with the goodness of God?

In what part of the office of our external senses, are our senses not fallacious?

How far does Reid contend for the truth of our senses?

The first imputed fallacy easily explained?

Error with respect to apparent motion not fairly attributable to our senses?

On what supposition is the second class of fallacies distinct from the first?

Origin of the third class?

Remarkable proof of the accuracy of our senses?

The last class of fallacies affords no objection to the evidence or truth of our senses?

Philosophers doubly wrong in complaining of the fallacy of the senses?

Whence originated all these objections to the truth of the senses?

How are they inconsistent with the philosophic theory of ideas?

ESSAY III.

OF MEMORY.

CHAPTER I.

THINGS OBVIOUS AND CERTAIN WITH REGARD TO MEMORY.

I. *Memory differs from sensation.*—IN the gradual progress of man, from infancy to maturity, there is a certain order in which his faculties are unfolded, and this seems to be the best order we can follow in treating of them.

The external senses appear first; memory soon follows, which we are now to consider.

It is by memory that we have an immediate knowledge of things past. The senses give us information of things only as they exist in the present moment; and this information, if it were not preserved by memory, would vanish instantly, and leave us as ignorant as if it had never been.

Memory must have an object. Every man who remembers must remember something, and that which he remembers is called the object of his remembrance. [In this, memory agrees with perception, but differs from sensation, which has no object but the feeling itself.]

Every man can distinguish the thing remembered from the remembrance of it. We may remember any thing which we have seen, or heard, or known, or done, or suffered; but the remembrance of it is a particular act of the mind which now exists, and of which we are conscious. To confound these two is an absurdity, which a thinking man could not be led into, but by some false hypothesis which hinders him from reflecting upon the thing which he would explain by it.

And from perception, in two ways.—[(1) In memory we do not find such a train of operations connected by our constitution as in perception.] When we perceive an object by our senses, there is, first, some impression made by the object upon the organ of sense, either immediately or by means of some medium. By this an impression is made upon the nerves and brain, in consequence of which we feel some sensation, and that sensation is attended by that conception and belief of the external object which we call perception. These operations are so connected

in our constitution, that it is difficult to disjoin them in our conceptions, and to attend to each without confounding it with the others. But in the operations of memory we are free from this embarrassment; they are easily distinguished from all other acts of the mind, and the names which denote them are free from all ambiguity. [(2) The object of memory, or thing remembered, must be something that is past; as the object of perception and of consciousness must be something which is present. What now is, cannot be an object of memory; neither can that which is past and gone be an object of perception or of consciousness.]

II. *The truth of memory has been always admitted.*—Memory is always accompanied with the belief of that which we remember, as perception is accompanied with the belief of that which we perceive, and consciousness with the belief of that whereof we are conscious. Perhaps in infancy, or in a disorder of mind, things remembered may be confounded with those which are merely imagined; but in mature years, and in a sound state of mind, every man feels that he must believe what he distinctly remembers, though he can give no other reason of his belief, but that he remembers the thing distinctly; whereas, when he merely imagines a thing ever so distinctly, he has no belief of it upon that account.

This belief, which we have from distinct memory, we account real knowledge, no less certain than if it was grounded on demonstration; no man in his wits calls it in question, or will hear any argument against it. ☞ The testimony of *witnesses* in causes of life and death depends upon it, and all the knowledge of mankind of past events is built on this foundation.

There are cases in which a man's memory is less distinct and determinate, and where he is ready to allow that it may have failed him; but this does not in the least weaken its credit, when it is perfectly distinct.

[*Memory implies a conception and belief of past duration;* for it is impossible that a man should remember a thing distinctly without believing some interval of duration, more or less, to have passed between the time it happened, and the present moment; and I think it is impossible to show how we could acquire a notion of duration if we had no memory.]

Things remembered must be things formerly perceived or known. I remember the transit of Venus over the sun in the year 1769. I must therefore have perceived it at the time it happened, otherwise I could not now remember it. Our first acquaintance with any object of thought cannot be by remembrance. Memory can only produce a continuance or renewal of a former acquaintance with the thing remembered.

III. *Duration and a conviction of identity inseparable from our remembrances.*—The remembrance of a past event is neces-

sarily accompanied with the conviction of our own existence at the time the event happened. I cannot remember a thing that happened a year ago, without a conviction as strong as memory can give, that I, the same identical person who now remember that event, did then exist.

What I have hitherto said concerning memory, I consider as principles which appear obvious and certain to every man who will take the pains to reflect upon the operations of his own mind. They are facts of which every man must judge by what he feels; and they admit of no other proof but an appeal to every man's own reflection. I shall therefore take them for granted in what follows, and shall first draw some conclusions from them, and then examine the theories of philosophers concerning memory, and concerning duration, and our personal identity, of which we acquire the knowledge by memory.

QUESTIONS FOR EXAMINATION.

Difference between memory and sensation?
Memory distinct or different from perception?
The truth of the evidence of memory evident from the opinion of the vulgar?
What idea always accompanies the distinct recollection of any object?
Another idea always attendant upon our remembrance of the past?

CHAPTER II.

MEMORY AN ORIGINAL FACULTY

I. *Of original faculties.*—FIRST, I think it appears that [memory is an *original* faculty, given us by the Author of our being, of which we can give no account, but that we are so made.]

The knowledge which I have of things past by my memory, seems to me as unaccountable as an immediate knowledge would be of things to come; and I can give no reason why I should have the one and not the other, but that such is the will of my Maker. I find in my mind a distinct conception and a firm belief of a series of past events; but how this is produced I know not. I call it memory, but this is only giving a name to it; it is not an account of its cause. I believe most firmly what I distinctly remember; but I can give no reason of this belief. It is the inspiration of the Almighty that gives me this understanding.

When I believe the truth of a mathematical axiom, or of a mathematical proposition, I see that it must be so. Every man who has the same conception of it sees the same. There is a necessary and an evident connexion between the subject and the

predicate of the proposition; and I have all the evidence to support my belief which I can possibly conceive.

When I believe that I washed my hands and face this morning, there appears no necessity in the truth of this proposition. It might be, or it might not be. A man may distinctly conceive it without believing it at all. How then do I come to believe it? I remember it distinctly. This is all I can say. This remembrance is an act of my mind. Is it impossible that this act should be, if the event had not happened? I confess I do not see any necessary connexion between the one and the other. If any man can show such a necessary connexion, then I think that belief which we have of what we remember will be fairly accounted for; but if this cannot be done, that belief is unaccountable, and we can say no more but that it is the result of our constitution.

II. *Confidence in the fidelity of memory does not arise from experience.*—[Perhaps it may be said, that the experience we have had of the fidelity of memory is a good reason for relying upon its testimony. I deny not that this may be a reason to those who have had this experience, and who reflect upon it. But I believe there are few who ever thought of this reason, or who found any need of it. It must be some very rare occasion that leads a man to have recourse to it; and in those who have done so, the testimony of memory was believed before the experience of its fidelity, *and that belief could not be caused by the experience which came after it.*]

[We know some abstract truths, by comparing the terms of the proposition which expresses them, and perceiving some *necessary* relation or agreement between them. It is thus I know that two and three make five; that the diameters of a circle are all equal. Mr. Locke having discovered this source of knowledge, too rashly concluded that all human knowledge might be derived from it; and in this he has been followed very generally; by Mr. Hume in particular.]

[But I apprehend, that our knowledge of the existence *of things contingent* can never be traced to this source. I know that such a thing exists, or did exist. This knowledge cannot be derived from the perception of a necessary agreement between existence and the thing that exists, because there is no such necessary agreement; and therefore no such agreement can be perceived either immediately, or by a chain of reasoning. The thing does not exist necessarily, but by the will and power of him that made it; and there is no contradiction follows from supposing it not to exist.]

Whence I think it follows, that our knowledge of the existence of our own thoughts, of the existence of all the material objects about us, and of all past contingencies, must be derived, not from

a perception of necessary relations or agreements, but from some other source.

Our Maker has provided other means for giving us the knowledge of these things; means which perfectly answer their end, and produce the effect intended by them. But in what manner they do this, is, I fear, beyond our skill to explain. We know our own thoughts, and the operations of our minds, by a power which we call *consciousness:* but this is only giving a name to this part of our frame. It does not explain its fabric, nor how it produces in us an irresistible conviction of its informations. We *perceive* material objects and their sensible qualities by our senses; but how they give us this information, and how they produce our belief in it, we know not. We know many past events by *memory;* but how it gives this information, I believe, is inexplicable.

III. *Absurdity of denying the prescience of God.*—It is well known what subtile disputes were held through all the scholastic ages, and are still carried on about the prescience of the Deity.* [Aristotle had taught, that there can be no certain foreknowledge of things contingent; and in this he has been very generally followed, upon no other grounds, as I apprehend, *but that we cannot conceive* how such things should be foreknown, and therefore conclude it to be impossible.] Hence has arisen an opposition and supposed inconsistency between Divine prescience and human liberty. Some have given up the first in favour of the last, and others have given up the last in order to support the first.

[It is remarkable, that these disputants have never apprehended that there is any difficulty in reconciling with liberty the knowledge of what is past, but only of what is future. It is prescience only, and not memory, that is supposed to be hostile to liberty, and hardly reconcilable to it.]

[Yet I believe the difficulty is perfectly equal in the one case and in the other. I admit, that we cannot account for prescience of the actions of a free agent. But I maintain that we can as little account for memory of the past actions of a free agent. If any man thinks he can prove that the actions of a free agent cannot be foreknown, he will find the same arguments of equal force to prove that the past actions of a free agent cannot be remembered. It is true, that what is past did certainly exist. It is no less true, that what is future will certainly exist.] I know no reasoning from the constitution of the agent, or from his circumstances, that has not equal strength, whether it be applied to his past or to his future actions. The past was, but now is not. The future will be, but now is not. The present is equally connected, or unconnected with both.

IV. *Mankind more readily admit of the reality of memory than*

* Essays on the Active Powers of the Mind, Essay iv. chap. 10, sec. 2.

of prescience.—[The only reason why men have apprehended so great disparity in cases so perfectly like, I take to be this, That the faculty of memory *in ourselves* convinces us from fact, that it is not impossible that an intelligent being, even a finite being, should have certain knowledge of past actions of free agents, without tracing them from any thing necessarily connected with them. But having *no prescience in ourselves* corresponding to our memory of what is past, we find great difficulty in admitting it to be possible even in the Supreme Being.]

A faculty which we possess in some degree, we easily admit that the Supreme Being may possess in a more perfect degree; but a faculty, which has nothing corresponding to it in our constitution, we will hardly allow to be possible. We are so constituted as to have an intuitive knowledge of many things past; but we have no intuitive knowledge of the future. We might perhaps have been so constituted as to have an intuitive knowledge of the future, but not of the past; nor would this constitution have been more unaccountable than the present, though it might be much more inconvenient. Had this been our constitution, we should have found no difficulty in admitting that the Deity may know all things future, but very much in admitting his knowledge of things that are past.

Our original faculties are all unaccountable. Of these memory is one. He only who made them, comprehends fully how they are made, and how they produce in us not only a conception, but a firm belief and assurance of things which it concerns us to know.

QUESTIONS FOR EXAMINATION.

What is meant by "original faculties?"
Confidence in the evidence of our memory does not arise from experience?
Source of all our knowledge, according to Locke, insufficient?
Absurdity of denying the prescience of God?
Why do we more readily admit the existence of memory than of prescience

CHAPTER III.

OF DURATION

I. *Origin of our notion of duration, and extent of its applicability as a measure.*—FROM the principles laid down in the first chapter of this Essay, I think it appears, that our notions of duration, as well as our belief of it, is got by the faculty of memory. It is essential to every thing remembered that it be something which is past; and we cannot conceive a thing to be past, without conceiving some duration, more or less, between it and the present. As soon therefore as we remember any thing, we must have both

a notion and a belief of duration. It is necessarily suggested by every operation of our memory; and to that faculty it ought to be ascribed. This is therefore a proper place to consider what is known concerning it.

[Duration, extension, and number, are the measures of all things subject to mensuration. When we apply them to *finite* things which are measured by them, they seem of all things to be the most distinctly conceived, and most within the reach of human understanding.]

[Extension having three dimensions, has an endless variety of modifications, capable of being accurately defined; and their various relations furnish the human mind with its most ample field of demonstrative reasoning. Duration having only one dimension, has fewer modifications; but these are clearly understood; and their relations admit of measure, proportion, and demonstrative reasoning.]

II. *Number not the measure of extension in every case.*—Number is called discrete quantity,* because it is compounded of units, which are all equal and similar, and it can only be divided into units. This is true, in some sense, even of fractions of unity, to which we now commonly give the name of number. For in every fractional number the unit is supposed to be subdivided into a certain number of equal parts, which are the units of that denomination, and the fractions of that denomination are only divisible into units of the same denomination. [Duration and extension are not discrete, but continued quantity. They consist of parts perfectly similar, *but divisible without end.*]

In order to aid our conception of the magnitude and proportions of the various intervals of duration, we find it necessary to give a name to some known portion of it, such as an hour, a day, a year. These we consider as units, and by the number of them contained in a larger interval, we form a distinct conception of its magnitude. A similar expedient we find necessary to give us a distinct conception of the magnitudes and proportions of things extended. [Thus, number is found necessary, as a common measure of extension and duration. But this perhaps is owing to the weakness of our understanding. It has even been discovered, by the sagacity of mathematicians, that this expedient does not in all cases answer its intention. For there are proportions of continued quantity, which cannot be perfectly expressed by numbers; such as that between the diagonal and side of a square, and many others.]

III. *Mode whereby we obtain our notions of past and future.*—The parts of duration have to other parts of it the relations of prior and posterior, and to the present they have the relations of past and future. [The notion of past is immediately suggested by memory, as has been before observed. And when we have

* "Two is as distinct from one, as two hundred."

got the notions of present and past, and of prior and posterior, we can from these frame a notion of the future; for the future is that which is posterior to the present.] Nearness and distance are relations equally applicable to time and to place. Distance in time, and distance in place, are things so different in their nature, and so like in their relation, that it is difficult to determine whether the name of distance is applied to both in the same or an analogical sense.

The extension of bodies which we perceive by our senses, leads us necessarily to the conception and belief of a space which remains immoveable when the body is removed. And the duration of events which we remember leads us necessarily to the conception and belief of a duration, which would have gone on uniformly, though the event had never happened.

Without space there can be nothing that is extended. And without time there can be nothing that hath duration. This I think undeniable. And yet we find that extension and duration are not more clear and intelligible than space and time are dark and difficult objects of contemplation.

As there must be space wherever any thing extended does or can exist, and time when there is or can be anything that has duration, we can set no bounds to either, even in our imagination. They defy all limitation. The one swells in our conception to immensity, the other to eternity.

An eternity past is an object which we cannot comprehend; but a beginning of time, unless we take it in a figurative sense, is a contradiction. By a common figure of speech, we give the name of time to those motions and revolutions by which we measure it, such as days and years. We can conceive a beginning of these sensible measures of time, and say that there was a time when they were not, a time undistinguished by any motion or change; but to say that there was a time before all time, is a contradiction.

All limited duration is comprehended in time, and all limited extension in space. These, in their capacious womb, contain all finite existences, but are contained by none. Created things have their particular place in space, and their particular place in time; *but time is every where, and space at all times.* They embrace each the other, and have that mysterious union which the schoolmen conceived between soul and body. The whole of each is in every part of the other.

IV. *Locke's division of complex ideas inadequate.*—We are at a loss to what *category* or class of things we ought to refer them. They are not beings, but rather the *receptacles** of every created being, without which it could not have had the possibility of existence. Philosophers have endeavoured to reduce all the objects of human thought to these three classes, of substances,

* Or capacities of containing all created beings.

modes, and relations. To which of them shall we refer time, space and number, the most common objects of thought?

V. *Newton's opinion as to space and time.*—[Sir Isaac Newton thought, that the Deity, by existing every where, and at all times, constitutes time and space, immensity and eternity. This probably suggested to his great friend Dr. Clarke what he calls the argument *à priori* for the existence of an immense and eternal Being.] Space and time, he thought, are only abstract or partial conceptions of an immensity and eternity, which forces itself upon our belief. And as immensity and eternity are not substances, they must be the attributes of a being who is necessarily immense and eternal. These are the speculations of men of superior genius. But whether they be as solid as they are sublime, or whether they be the wanderings of imagination in a region beyond the limits of human understanding, I am unable to determine.

The schoolmen made eternity to be a *nunc stans*, that is, a moment of time, that stands still. This was to put a spoke into the wheel of time, and might give satisfaction to those who are to be satisfied by words without meaning. But I can as easily believe a circle to be a square as time to stand still.

Such paradoxes and riddles, if I may so call them, men are involuntarily led into when they reason about time and space, and attempt to comprehend their nature. [They are [illegible] things of which the human faculties give an imperfect [illegible] quate conception.] Hence difficulties arise which [illegible] attempt to overcome, and doubts which we are unable [illegible]. Perhaps some faculty which we possess not, is necessary to remove the darkness which hangs over them, and makes [illegible] apt to bewilder ourselves when we reason about them.

QUESTIONS FOR EXAMINATION.

The measures of all measurable subjects?
Peculiarity of each?
Number not a measure of extension in every instance?
How is the notion of the past, and of the future, suggested?
Locke's division of complex ideas inadequate?
Newton's opinion as to space and time?

CHAPTER IV.

OF IDENTITY

I. *A conviction of identity necessary to the exercise of reason.*—The conviction which every man has of his identity, as far back as his memory reaches, needs no aid of philosophy to strengthen it, and no philosophy can weaken it, without first producing some degree of insanity.

The philosopher, however, may very properly consider this conviction as a phenomenon of human nature worthy of his attention. If he can discover its cause, an addition is made to his stock of knowledge: if not, it must be held as a part of our original constitution, or an effect of that constitution produced in a manner unknown to us.

[We may observe, first of all, that this conviction is indispensably necessary to all exercise of reason. The *operations of reason, whether in action or in speculation, are made up of successive parts.* The antecedent are the foundation of the consequent, and without the conviction that the antecedent have been seen or done by me, I could have no reason to proceed to the consequent, in any speculation, or in any active project whatever.]

There can be no memory of what is past without the conviction that we existed at the time remembered. There may be good arguments to convince me that I existed before the earliest thing I can remember; but to suppose that my memory reaches a moment further back than my belief and conviction of my existence, is a contradiction.

The moment a man loses this conviction, as if he had drunk the water of Lethe, past things are done away; and, in his own belief, he then begins to exist. Whatever was thought, or said, or done, or suffered, before that period, may belong to some other person; but he can never impute it to himself, or take any subsequent step that supposes it to be his doing.

From this it is evident, that we must have the conviction of our own continued existence and identity, as soon as we are capable of thinking or doing any thing, on account of what we have thought, or done, or suffered before; that is, as soon as we are reasonable creatures.

That we may form as distinct a notion as we are able of this phenomenon of the human mind, it is proper to consider what is meant by identity in general, what by our own personal identity, and how we are led into that invincible belief and conviction which every man has of his own personal identity, as far as his memory reaches.

II. [*Identity in general,* I take to be a relation between a thing which is known to exist at one time, and a thing which is known to have existed at another time.] If you ask whether they are one and the same, or two different things, every man of common sense understands the meaning of your question perfectly. Whence we may infer with certainty, that every man of common sense has a clear and distinct notion of identity.

If you ask a definition of identity, I confess I can give none; it is too simple a notion to admit of logical definition: I can say it is a relation, but I cannot find words to express the specific

difference between this and other relations, though I am in no danger of confounding it with any other. I can say that diversity is a contrary relation, and that similitude and dissimilitude are another couple of contrary relations, which every man easily distinguishes in his conception from identity and diversity.

III. I see evidently that *identity supposes an uninterrupted continuance of existence.* [That which hath ceased to exist, cannot be the same with that which afterwards begins to exist; for this would be to suppose a being to exist after it ceased to exist, and to have had existence before it was produced, which are manifest contradictions.* *Continued uninterrupted existence* is therefore necessarily implied in identity.]

IV. *Objects to which identity is inapplicable.*—[Hence we may infer, that identity cannot, in its proper sense, be applied to our pains, our pleasures, our thoughts, or *any operation of our minds.* The pain felt this day is not the same individual pain which I felt yesterday, though they may be *similar* in kind and degree, and have the same cause. The same may be said of every feeling, and of every operation of mind. They are all successive in their nature like time itself, no two moments of which can be the same moment.]

V. *No doubt can exist concerning the identity of the parts of space, or the diversity of the parts of duration.*—It is otherwise with the parts of absolute space. They always are, and were, and will be the same. So far, I think, we proceed upon clear ground in fixing the notion of identity in general.

VI. *Personality.*—[It is perhaps more difficult to ascertain with precision *the meaning of personality;* but it is not necessary in the present subject: it is sufficient for our purpose to observe, that all mankind place their personality *in something that cannot be divided, or consist of parts.* A part of a person is a manifest absurdity.]

When a man loses his estate, his health, his strength, he is still the same person, and has lost nothing of his personality. If he has a leg or an arm cut off, he is the same person he was before. The amputated member is no part of his person, otherwise it would have a right to a part of his estate, and be liable for a part of his engagements. It would be entitled to a share of his merit and demerit, which is manifestly absurd. ☞ A person is something indivisible, and is what Leibnitz calls a *monad.*

[My personal identity, therefore, implies the continued existence of that indivisible thing which I call myself.] Whatever this self may be, it is something which thinks, and deliberates, and resolves, and acts, and suffers. I am not thought, I am not action, I am not feeling; I am something that thinks, and acts, and suffers. My thoughts, and actions, and feelings, change every moment; they have no continued, but a successive existence; but that

self or *I*, to which they belong, is permanent, and has the same relation to all the succeeding thoughts, actions, and feelings which I call mine.

Such are the notions that I have of my personal identity. But perhaps it may be said, this may all be fancy without reality. How do you know; what evidence have you, that there is such a permanent self which has a claim to all the thoughts, actions, and feelings which you call yours?

VII. *Evidence of personal identity, and caution to be observed in admitting it.*—[To this I answer, that the proper evidence I have of all this is *remembrance*.] I remember that twenty years ago I conversed with such a person; I remember several things that passed in that conversation: my memory testifies not only that this was done, but that it was done by me who now remember it: if it was done by me, I must have existed at that time, and continued to exist from that time to the present: if the identical person whom I call myself, had not a part in that conversation, my memory is fallacious; it gives a distinct and positive testimony of what is not true. Every man in his senses believes what he distinctly remembers, and every thing he remembers convinces him that he existed at the time remembered.

Although memory gives the most irresistible evidence of my being the identical person that did such a thing, at such a time, I may have other good evidence of things which befell me, and which I do not remember: I know who bare me, and suckled me, but I do not remember these events.

[It may here be observed, (though the observation would have been unnecessary, if some great philosophers had not contradicted it,) that it is not my remembering any action of mine that *makes me* to be the person who did it. This remembrance makes me *to know* assuredly that I did it; *but I might have done it, though I did not remember it.*] That relation to me, which is expressed by saying that I did it, would be the same, though I had not the least remembrance of it. To say that my remembering that I did such a thing, or, as some choose to express it, my being conscious that I did it, makes me to have done it, appears to me as great an absurdity as it would be to say, ☞ that my belief that the world was created, made it to be created.

When we pass judgment on the identity of other persons besides ourselves, we proceed upon other grounds, and determine from a variety of circumstances, which sometimes produce the firmest assurance, and sometimes leave room for doubt. The identity of persons has often furnished matter of serious litigation before tribunals of justice. But no man of a sound mind

ever doubted of his own identity, as far as he distinctly remembered.

The identity of a person is a perfect identity; wherever it is real, it admits of no degrees; and it is impossible that a person should be in part the same, and in part different; because a person is a *monad*, and is not divisible into parts. The evidence of identity in other persons besides ourselves, does indeed admit of all degrees, from what we account certainty, to the least degree of probability. But still it is true, that the same person is perfectly the same, and cannot be so in part, or in some degree only.

For this cause, I have first considered personal identity, as that which is perfect in its kind, and the natural measure of that which is imperfect.

VIII. *Origin of our first notion of identity.*—[We probably at first derive our notion of identity from that natural conviction which every man has from the dawn of reason of *his own* identity and continued existence.] The operations of our minds are all successive, and have no continued existence. But the thinking being has a continued existence, and we have an invincible belief, that it remains the same when all its thoughts and operations change.

IX. *Similarity the foundation of our judgments of the identity of other persons.*—[Our judgments of the identity of objects of sense seem to be formed much upon the same grounds as our judgments of the identity of *other persons* besides ourselves.

Wherever we observe great *similarity*, we are apt to presume identity, if no reason appears to the contrary.] Two objects ever so like, when they are perceived at the same time, cannot be the same: but if they are presented to our senses at different times, we are apt to think them the same, merely from their similarity.

Whether this be a natural prejudice, or from whatever cause it proceeds, it certainly appears in children from infancy; and, when we grow up, it is confirmed in most instances by experience: for we rarely find two individuals of the same species that are not distinguishable by obvious differences.

A man challenges a thief whom he finds in possession of his horse or his watch, only on similarity. When the watchmaker swears that he sold this watch to such a person, his testimony is grounded on similarity. The testimony of witnesses to the identity of a person is commonly grounded on no other evidence.

Memory, of our judgment of our own.—[Thus it appears, that the evidence we have of our own identity, as far back as we remember, is totally of a different kind from the evidence we have of the identity of other persons, or of objects of sense. *The first is grounded on memory, and gives undoubted certainty.*

The last is grounded on *similarity*, and on other circumstances, which in many cases *are not so decisive as to leave no room for doubt.*]

It may likewise be observed, that the identity of *objects of sense* is never perfect. All bodies, as they consist of innumerable parts that may be disjoined from them by a great variety of causes, are subject to continual changes of their substance, increasing, diminishing, changing insensibly. [When such alterations are gradual, *because language could not afford a different name for every different state of such a changeable being*, it retains the same name, and is considered as the same thing.] Thus we say of an old regiment, that it did such a thing a century ago, though there now is not a man alive who then belonged to it. We say a tree is the same in the seed-bed and in the forest. A ship of war, which has successively changed her anchors, her tackle, her sails, her masts, her planks, and her timbers, while she keeps the same name, is the same.

X. *Corporeal different from personal identity.*—[The identity therefore which we ascribe to bodies, whether natural or artificial, is not perfect identity; it is rather something, which, for the conveniency of speech, we call identity. It admits of a great change of the subject, *providing the change be gradual*, sometimes even of a total change. And the changes which in common language are made consistent with identity, differ from those that are thought to destroy it, not in *kind*, but in *number* and *degree*.] It has no fixed nature when applied to bodies; and questions about the identity of a body are very often questions about words. But identity, when applied to persons, has no ambiguity, and admits not of degrees, or of more and less. ☞ It is the foundation of all rights and obligations, and of all accountableness; and the notion of it is fixed and precise.

QUESTIONS FOR EXAMINATION.

Why is the conviction of our identity necessary to the exercise of reason?
How is the continuation of existence implied in our idea of identity?
To what objects is identity inapplicable?
In what does personal identity consist?
Its evidence?
Caution to be observed in receiving it?
Whence is our first notion of identity derived?
The foundation of our judgments as to the identity of others?
Different from our notions of our own identity?
Identity of bodies distinct from personal identity?

CHAPTER V.

MR. LOCKE'S ACCOUNT OF THE ORIGIN OF OUR IDEAS, AND PARTICULARLY OF THE IDEA OF DURATION.

I. *Of duration.*—It was a very laudable attempt of Mr. Locke "to inquire into the original of those ideas, notions, or whatever else you please to call them, which a man observes, and is conscious to himself he has in his mind, and the ways whereby the understanding comes to be furnished with them." No man was better qualified for this investigation; and I believe no man ever engaged in it with a more sincere love of truth.

His success, though great, would, I apprehend, have been greater, if he had not too early formed a system or hypothesis upon this subject, without all the caution and patient induction which is necessary in drawing general conclusions from facts.

The sum of his doctrine I take to be this, "That all our ideas or notions may be reduced to two classes, the simple and the complex. That the simple are purely the work of nature, the understanding being merely passive in receiving them: that they are all suggested by two powers of the mind, to wit, sensation and reflection; and that they are the materials of all our knowledge. That the other class of complex ideas are formed by the understanding itself, which being once stored with simple ideas of sensation and reflection, has the power to repeat, to compare, and to combine them even to an almost infinite variety, and so can make at pleasure new complex ideas: but that it is not in the power of the most exalted wit, or enlarged understanding, by any quickness or variety of thought, to invent or frame one new simple idea in the mind, not taken in by the two ways before mentioned. That as our power over the material world reaches only to the compounding, dividing, and putting together, in various forms, the matter which God has made, but reaches not to the production or annihilation of a single atom; so we may compound, compare, and abstract the original and simple ideas which nature has given us; but are unable to fashion in our understanding any simple idea, not received in by our senses from external objects, or by reflection from the operations of our own mind about them."

This account of the origin of all our ideas is adopted by Bishop Berkeley and Mr. Hume; but some very ingenious philosophers, who have a high esteem of Locke's Essay, are dissatisfied with it.

Dr. Hutcheson, of Glasgow, in his "Enquiry into the Ideas of Beauty and Virtue," has endeavoured to show that these are original and simple ideas, furnished by original powers, which he calls the sense of beauty and the moral sense.

Dr. Price, in his "Review of the Principal Questions and Difficulties in Morals," has observed very justly, that if we take the words *sensation* and *reflection*, as Mr. Locke has defined them in the beginning of his excellent Essay, it will be impossible to derive some of the most important of our ideas from them; and that, by the understanding, that is by our judging and reasoning power, we are furnished with many simple and original notions.

II. "*Reflection*" *understood in two senses.*—Mr. Locke says, that, by reflection, he would be understood to mean "(1) the notice which the mind takes of its own operations, and (2) the manner of them." This, I think, we commonly call consciousness; from which, indeed, we derive all the notions we have of the operations of our own minds; and he often speaks of the operations of our own minds, as the only objects of reflection.

When reflection is taken in this confined sense, to say, that all our ideas are ideas either of sensation or reflection, is to say, that everything we can conceive is either some object of sense, or some operation of our own minds, *which is far from being true.*

III. *In one sense reflection is the only source of our accurate notions of things.*—But the word reflection is commonly used in a much more extensive sense; it is applied to many operations of the mind, with more propriety than to that of consciousness. We reflect, when we remember or call to mind what is past, and survey it with attention. We reflect, when we define, when we distinguish, when we judge, when we reason, whether about things material or intellectual.

[When reflection is taken in this sense, which is more common, and therefore more proper than the sense which Mr. Locke has put upon it, it may be justly said to be *the only source of all our distinct and accurate notions of things.*] For, although our first notions of material things are got by the external senses, and our first notions of the operations of our own minds by consciousness, these first notions are neither simple nor clear. Our senses and our consciousness are continually shifting from one object to another; their operations are transient and momentary, and leave no distinct notion of their objects, until they are recalled by memory, examined with attention, and compared with other things.

This reflection is not one power of the mind; it comprehends many; such as recollection, attention, distinguishing, comparing, judging. By these powers our minds are furnished not only with many simple and original notions, but with all our notions, which are accurate and well defined, and which alone are the proper materials of reasoning. Many of these are neither notions of the objects of sense, nor of the operations of our own minds, and

therefore neither ideas of sensation nor of reflection, in the sense that Mr. Locke gives to reflection. But if any one chooses to call them ideas of reflection, taking the word in the more common and proper sense, I have no objection.

IV. *Locke's account of the origin of our ideas confused by an ambiguous use of the term "reflection."*—[Mr. Locke seems to me to have used the word reflection sometimes in that limited sense which he has given to it in the definition before mentioned, and sometimes to have fallen unawares into the common sense of the word; *and by this ambiguity his account of the origin of our ideas is darkened and perplexed.*]

V. *Price objects to Locke's origin of our idea of duration.*—Having premised these things in general of Mr. Locke's theory of the origin of our ideas or notions, I proceed to some observations on his account of the idea of duration.

["Reflection," he says, "upon the train of ideas, which appear one after another in our minds, is that which furnishes us with the idea of succession: and the distance between any two parts of that succession, is that we call duration."

(1) If it be meant that the idea of succession is prior to that of duration, either in time, or in the order of nature, this, I think, is impossible; because succession, as Dr. Price justly observes, presupposes duration, and can in no sense be prior to it; and therefore it would be more proper to derive the idea of succession from that of duration.]

But how do we get the idea of succession? It is, says he, by reflecting upon the train of ideas, which appear one after another in our minds.

[(2) Reflecting upon the train of ideas can be nothing but *remembering* it, and giving attention to what our memory testifies concerning it; for if we did not remember it, we could not have a thought about it. So that it is evident that this reflection includes *remembrance*, without which there could be no reflection on what is past, and consequently no idea of succession.]

[(3) It may here be observed, that if we speak strictly and philosophically, no kind of succession can be an object either of the senses or of consciousness; *because the operations of both are confined to the present point of time*, and there can be no succession in a point of time; and on that account the motion of a body, which is a successive change of place, could not be observed by the senses alone without the aid of memory.]

As this observation seems to contradict the common sense and common language of mankind, when they affirm that they see a body move, and hold motion to be an object of the senses, it is proper to take notice, that this contradiction between the philosopher and the vulgar is apparent only, and not real. It arises from this, that philosophers and the vulgar differ in the meaning

they put upon what is called the *present* time, and are thereby led to make a different limit between sense and memory.

Philosophers give the name of the *present* to that indivisible point of time, which divides the future from the past: but the vulgar find it more convenient in the affairs of life, to give the name of *present* to a portion of time, which extends more or less, according to circumstances, into the past or the future. Hence we say, the present hour, the present year, the present century, though one point only of these periods can be present in the philosophical sense.

It has been observed by grammarians, that the present tense in verbs is not confined to an indivisible point of time, but is so far extended as to have a beginning, a middle, and an end; and that in the most copious and accurate languages, these different parts of the present are distinguished by different forms of the verb.

As the purposes of conversation make it convenient to extend what is called the present, the same reason leads men to extend the province of sense, and to carry its limit as far back as they carry the present. Thus a man may say, I saw such a person just now; it would be ridiculous to find fault with this way of speaking, because it is authorised by custom, and has a distinct meaning: but if we speak philosophically, the senses do not testify what we saw, but only what we see; what I saw last moment I consider as the testimony of sense, though it is now only the testimony of memory.

There is no necessity in common life of dividing accurately the provinces of sense and of memory; and therefore we assign to sense, not an indivisible point of time, but that small portion of time which we call the present, which has a beginning, a middle, and an end.

VI. *Idea of succession from memory only.*—Hence it is easy to see, that though in common language we speak with perfect propriety and truth, when we say, that we see a body move, and that motion is an object of sense, yet when as philosophers we distinguish accurately the province of sense from that of memory, we can no more see what is past, though but a moment ago, than we can remember what is present; so that speaking philosophically, it is only by the *aid of memory* that we discern motion, or any succession whatsoever: we see the present place of the body; we remember the successive advance it made to that place: the first can then only give us a conception of motion, when joined to the last.

VII. *Duration may be conceived where there is no succession of ideas.*—Having considered the account given by Mr. Locke, of the idea of *succession*, we shall next consider how, from the idea of succession, he derives the idea of *duration*.

"The distance," he says, "between any parts of that succession,

or between the appearance of any two ideas in our minds, is that we call duration."

[To conceive this the more distinctly, let us call the distance between an idea and that which immediately succeeds it, one element of duration; the distance between an idea and the second that succeeds it, two elements, and so on: if ten such elements make duration, then one must make duration, otherwise duration must be made up of parts that have no duration, which is impossible.]

For, suppose a succession of as many ideas as you please, if none of these ideas have duration, nor any interval of duration be between one and another; then it is perfectly evident there can be no interval of duration between the first and the last, how great soever their number be. I conclude, therefore, that there must be duration in every single interval or element of which the whole duration is made up. Nothing indeed is more certain than that every elementary part of duration must have duration, as every elementary part of extension must have extension.

[Now it must be observed, that in these elements of duration, or single intervals of successive ideas, there is no succession of ideas, yet we must conceive them to have duration; whence we may conclude with certainty, that *there is a conception of duration, where there is no succession of ideas in the mind.*]

☞ We may measure duration by the succession of thoughts in the mind, as we measure length by inches or feet; but the notion or idea of duration must be antecedent to the mensuration of it, as the notion of length is antecedent to its being measured.

VIII. *Locke's origin of our idea of duration leads to two false conclusions.*—Mr. Locke draws some conclusions from his account of the idea of duration, which may serve as a touchstone to discover how far it is genuine. [One is, that if it were possible for a waking man, to keep only one idea in his mind without variation, or the succession of others, he would have no perception of duration at all; and the moment he began to have this idea, would seem to have no distance from the moment he ceased to have it.]

☞ [Now that one idea should seem to have no duration, and that a multiplication of that *no duration* should seem to have duration, appears to me as impossible as that the multiplication of nothing should produce something.]

[Another conclusion which the author draws from this theory is, that the same period of duration appears long to us, when the succession of ideas in our mind is quick, and short when the succession is slow.]

There can be no doubt but the same length of duration appears in some circumstances much longer than in others; the time appears long when a man is impatient under any pain or distress,

or when he is eager in the expectation of some happiness: on the other hand, when he is pleased and happy in agreeable conversation, or delighted with a variety of agreeable objects that strike his senses, or his imagination, time flies away, and appears short.

[According to Mr. Locke's theory, in the first of these cases, the succession of ideas is very quick, and in the last very slow: I am rather inclined to think that the very contrary is the truth. When a man is racked with pain, or with expectation, *he can hardly think of any thing but his distress;* and the more his mind is occupied by that sole object, the longer the time appears. On the other hand, when he is entertained with cheerful music, with lively conversation, and brisk sallies of wit, there seems to be the quickest succession of ideas, but the time appears shortest.]

I have heard a military officer, a man of candour and observation, say, that the time he was engaged in hot action always appeared to him much shorter than it really was. Yet I think it cannot be supposed, that the succession of ideas was then slower than usual.

[If the idea of duration were got merely by the succession of ideas in our minds, that succession must to ourselves appear equally quick at all times, because the only measure of duration is the *number* of succeeding ideas; but I believe every man capable of reflection will be sensible, that at one time his thoughts come slowly and heavily, and at another time have a much quicker and livelier motion.]

IX. *Difference between the parts of space, compared amongst themselves, and the parts of duration.*—I know of no ideas or notions that have a better claim to be accounted *simple* and *original* than those of space and time. It is essential both to space and time to be made up of parts, but every part is similar to the whole, and of the same nature. [Different parts of space, as it has three dimensions, may differ both in *figure* and in *magnitude;* but time having only one dimension, its parts can differ only in *magnitude;* and, as it is one of the simplest objects of thought, the conception of it must be purely the effect of our constitution, and given us by some *original power of the mind.*]

The sense of seeing, by itself, gives us the conception and belief of only two dimensions of extension, but the sense of touch discovers three; and reason, from the contemplation of finite extended things, leads us necessarily to the belief of an immensity that contains them. In like manner, memory gives us the conception and belief of finite intervals of duration. From the contemplation of these, reason leads us necessarily to the belief of an eternity, which comprehends all things that have a beginning and end. Our conceptions, both of space and time, are probably partial and inadequate, and therefore we are apt to

lose ourselves, and to be embarrassed in our reasonings about them.

X. *Our ideas of space and duration may be said to be confused in a twofold sense.* [Our understanding is no less puzzled when we consider the minutest parts of time and space than when we consider the whole. We are forced to acknowledge, that in their nature they are divisible without end or limit; but there are limits beyond which our faculties can divide neither the one nor the other.]

It may be determined by experiment, what is the least angle under which an object may be discerned by the eye, and what is the least interval of duration that may be discerned by the ear. I believe these may be different in different persons: but surely there is a limit which no man can exceed; and what our faculties can no longer divide is still divisible in itself, and, by beings of superior perfection, may be divided into thousands of parts.

I have reason to believe, that a good eye in the prime of life may see an object under an angle not exceeding half a minute of a degree, and I believe there are some human eyes still more perfect. But even this degree of perfection will appear great, if we consider how small a part of the retina of the eye it must be which subtends an angle of half a minute.

Supposing the distance between the centre of the eye and the retina to be six or seven tenths of an inch, the subtense of an angle of half a minute to that radius, or the breadth of the image of an object seen under that angle, will not be above the ten thousandth part of an inch. This shows such a wonderful degree of accuracy in the refracting power of a good eye, that a pencil of rays coming from one point of the object shall meet in one point of the retina, so as not to deviate from that point the ten thousandth part of an inch. It shows, likewise, that such a motion of an object as makes its image on the retina to move the ten thousandth part of an inch, is discernible by the mind.

In order to judge to what degree of accuracy we can measure short intervals of time, it may be observed, that one who has given attention to the motion of a second pendulum, will be able to beat seconds for a minute with a very small error. When he continues this exercise long, as for five or ten minutes, he is apt to err, more even than in proportion to the time, for this reason, as I apprehend, that it is difficult to attend long to the moments as they pass, without wandering after some other object of thought. I have found, by some experiments, that a man may beat seconds for one minute, without erring above one second in the whole sixty; and I doubt not but by long practice he might do it still more accurately. From this I think it follows, that the sixtieth part of a second of time is discernible by the human mind.

QUESTIONS FOR EXAMINATION.

Reflection may be understood in a twofold sense?
In which is it the only source of our distinct ideas?
By what ambiguity has Locke rendered his origin of our ideas confused?
Locke's idea of duration objected to by Price?
In this passage of Locke "Reflection" cannot be used in the signification which he originally intended?
Another objection to Locke's origin of the idea of duration?
What false conclusions has he drawn from this theory?
The parts of space and those of duration respectively not similarly related?
Our ideas of space and duration are said to be confused in a twofold sense?

CHAPTER VI.

OF MR. LOCKE'S ACCOUNT OF OUR PERSONAL IDENTITY.

1. *Of personal identity.*—In a long chapter upon identity and diversity, Mr. Locke has made many ingenious and just observations, and some which I think cannot be defended. I shall only take notice of the account he gives of our own personal identity. His doctrine upon this subject has been censured by Bishop Butler, in a short essay subjoined to his "Analogy," with whose sentiments I perfectly agree.

Identity, as was observed chap. iv. of this Essay, supposes the continued existence of the being of which it is affirmed, and therefore can be applied only to things which have a continued existence. While any being continues to exist, it is the same being; but two beings which have a different beginning or a different ending of their existence, cannot possibly be the same. To this I think Mr. Locke agrees.

He observes very justly, that to know what is meant by the same person, we must consider what the word person stands for; and he defines a person to be an intelligent being, endowed with reason and with consciousness, which last he thinks inseparable from thought.

From this definition of a person, it must necessarily follow, that while the intelligent being continues to exist and to be intelligent, it must be the same person. To say that the intelligent being is the person, and yet that the person ceases to exist, while the intelligent being continues, or that the person continues while the intelligent being ceases to exist, is to my apprehension a manifest contradiction.

One would think that the definition of a person should perfectly ascertain the nature of personal identity, or wherein it consists, though it might still be a question *how we come to know and be assured of our personal identity.*

Mr. Locke tells us, however, "that personal identity, that is,

the sameness of a rational being, consists in consciousness alone, and, as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person. So that whatever hath the consciousness of present and past actions, is the same person to whom they belong."

II. *Four strange consequences follow from Locke's account of personal identity.*—This doctrine hath some strange consequences, which the author was aware of. [(1) Such as, that if the same consciousness can be transferred from one intelligent being to another, which he thinks we cannot show to be impossible, *then two or twenty intelligent beings may be the same person.* (2) And if the intelligent being may lose the consciousness of the actions done by him, which surely is possible, then he is not the person that did those actions; so that *one intelligent being may be two or twenty different persons,* if he shall so often lose the consciousness of his former actions.]

[(3) There is another consequence of this doctrine, which follows no less necessarily, though Mr. Locke probably did not see it. It is, that a man may be, and at the same time not be, the person that did a particular action.]

☞ Suppose a brave officer to have been flogged when a boy at school, for robbing an orchard, to have taken a standard from the enemy in his first campaign, and to have been made a general in advanced life; suppose, also, which must be admitted to be possible, that when he took the standard, he was conscious of his having been flogged at school, and that when made a general, he was conscious of his taking the standard, but had absolutely lost the consciousness of his flogging.

These things being supposed, it follows, from Mr. Locke's doctrine, that he who was flogged at school is the same person who took the standard, and that he who took the standard is the same person who was made a general. Whence it follows, if there be any truth in logic, that the general is the same person with him who was flogged at school. But the general's consciousness does not reach so far back as his flogging, therefore, according to Mr. Locke's doctrine, he is not the person who was flogged. Therefore the general is, and at the same time is not, the same person with him who was flogged at school.

III. *Objections to Locke's theory stated.*—Leaving the consequences of this doctrine to those who have leisure to trace them, we may observe, with regard to the doctrine itself,

[*First,* that Mr. Locke attributes to consciousness the conviction we have of our past actions, as if a man may now be conscious of what he did twenty years ago. It is impossible to understand the meaning of this, unless by consciousness be meant memory, the only faculty by which we have an immediate knowledge of our past actions.]

Sometimes, in popular discourse, a man says he is conscious that he did such a thing, meaning that he distinctly remembers that he did it. It is unnecessary, in common discourse, to fix accurately the limits between consciousness and memory. This was formerly shown to be the case with regard to sense and memory: and therefore distinct remembrance is sometimes called sense, sometimes consciousness, without any inconvenience.

But this ought to be avoided in philosophy, otherwise we confound the different powers of the mind, and ascribe to one what really belongs to another. If a man can be conscious of what he did twenty years or twenty minutes ago, there is no use for memory, nor ought we to allow that there is any such faculty. The faculties of consciousness and memory are chiefly distinguished by this, that the first is an immediate knowledge of the present, the second an immediate knowledge of the past.

When, therefore, Mr. Locke's notion of personal identity is properly expressed, it is, that personal identity consists in distinct remembrance; for, even in the popular sense, to say that I am conscious of a past action, means nothing else than that I distinctly remember that I did it.

[*Secondly*, it may be observed that, in this doctrine, not only is consciousness confounded with memory, but, which is still more strange, personal identity is confounded with the *evidence* which we have of our personal identity.]

It is very true, that my remembrance that I did such a thing is the evidence I have that I am the identical person who did it. And this, I am apt to think, Mr. Locke meant. But to say that my remembrance that I did such a thing, or my consciousness, makes me the person who did it, is, in my apprehension, an absurdity too gross to be entertained by any man who attends to the meaning of it; [for it is to attribute to memory or consciousness a strange magical power of producing its object, though that object must have existed before the memory or consciousness which produced it.].

Consciousness is the testimony of one faculty; memory is the testimony of another faculty; and to say that the testimony is the cause of the thing testified, this surely is absurd, if any thing be, and could not have been said by Mr. Locke, if he had not confounded the testimony with the thing testified.

☞ When a horse that was stolen is found and claimed by the owner, the only evidence he can have, or that a judge or witnesses can have, that this is the very identical horse which was his property, is similitude. But would it not be ridiculous from this to infer that the identity of a horse consists in similitude only? The only evidence I have that I am the identical person who did such actions is, that I remember distinctly I did them; or, as Mr. Locke expresses it, I am conscious I did them. [To

infer from this, that personal identity consists in consciousness, is an argument which, if it had any force, would prove the identity of a stolen horse to consist solely in similitude.]

[*Thirdly*, is it not strange that the sameness or identity of a person should consist in a thing *which is continually changing*, and is not any two minutes the same?]

IV.* *Fourth strange consequence.*—Our consciousness, our memory, and every operation of the mind, are still flowing like the water of a river, or like time itself. The consciousness I have this moment, can no more be the same consciousness I had last moment, than this moment can be the last moment. Identity can only be affirmed of things which have a continued existence. Consciousness, and every kind of thought, is transient and momentary, and has no continued existence; and, therefore, if personal identity consisted in consciousness, it would certainly follow, that *no man is the same person any two moments of his life;* and as the right and justice of reward and punishment is founded on personal identity, no man could be responsible for his actions.

But though I take this to be the unavoidable consequence of Mr. Locke's doctrine concerning personal identity, and though some persons may have liked the doctrine the better on this account, I am far from imputing anything of this kind to Mr. Locke. He was too good a man not to have rejected with abhorrence a doctrine which he believed to draw this consequence after it.

[*Fourthly*, there are many expressions used by Mr. Locke, in speaking of personal identity, which to me are altogether unintelligible, unless we suppose that he confounded that sameness or identity, which we ascribe to an individual, with the identity which in common discourse is often ascribed to many individuals of the same species.]

When we say that pain and pleasure, consciousness and memory, are the same in all men, this sameness can only mean similarity, or sameness of kind; but that the pain of one man can be the same individual pain with that of another man, is no less impossible than that one man should be another man; the pain felt by me yesterday, can no more be the pain I feel to-day, than yesterday can be this day; and the same thing may be said of every passion and of every operation of the mind. The same kind or species of operation may be in different men, or in the same man at different times; but it is impossible that the same individual operation should be in different men, or in the same man at different times.

When Mr. Locke therefore speaks of "the same consciousness being continued through a succession of different substances;"

* Vide p. 244.

when he speaks of "repeating the idea of a past action, with the same consciousness we had of it at the first," and of "the same consciousness extending to actions past and to come;" these expressions are to me unintelligible, unless he means not the same individual consciousness, but a consciousness that is similar, or of the same kind.

If our personal identity consists in consciousness, as this consciousness cannot be the same individually any two moments, but only of the *same kind*, it would follow, that we are not for any two moments the same individual persons, but the same kind of persons.

V. *Locke admits a principle which subverts his own doctrine.*—As our consciousness sometimes ceases to exist, as in sound sleep, our personal identity must cease with it. *Mr. Locke allows*, that the same thing cannot have two beginnings of existence, so that our identity would be irrecoverably gone every time we cease to think, if it was but for a moment.

QUESTIONS FOR EXAMINATION.

Locke's account of personal identity, and its consequences?
Four objections advanced by Reid to Locke's theory?
A principle conceded by Locke, inconsistent with his doctrine?

CHAPTER VII.

THEORIES CONCERNING MEMORY.

I. *Of imagination and memory.*—THE common theory of ideas, that is of images in the brain or in the mind, of all the objects of thought, has been very generally applied to account for the faculties of memory and imagination, as well as that of perception by the senses.

The sentiments of the Peripatetics are expressed by Alexander Aphrodisiensis, one of the earliest Greek commentators on Aristotle, in these words, as they are translated by Mr. Harris, in his "Hermes," "Now what fancy or imagination is, we may explain as follows: [we may conceive to be formed within us, from the operations of our senses about sensible objects, some impression, as it were, or picture in our original sensorium, being *a relict of that motion caused within us by the external object;* a relict, which when the external object is no longer present, remains, and is still preserved, being as it were its image, and which, by being thus preserved, becomes the cause of our having memory: now such a sort of relict, and as it were impression, they call fancy or imagination."]*

Another passage from Alcinous *of the doctrines of* Plato, chap. iv. shows the agreement of the ancient Platonists and Peri-

* 8vo. edit.; Oxford, 1841; p. 220, note.

patetics in this theory, "When the form or type of things is imprinted on the mind by the organs of the senses, and so imprinted as not to be deleted by time, but preserved firm and lasting, its preservation is called memory."

☞ Upon this principle Aristotle imputes the shortness of memory in children to this cause, that their *brain is too moist and soft* to retain impressions made upon it: ☞ and the defect of memory in old men he imputes, on the contrary, to the *hardness and rigidity* of the brain, which hinders its receiving any durable impression.

II. *Peripatetic theory of memory defective.*—[This ancient theory of the cause of memory is defective in two respects: *first*, If the cause assigned did really exist, it by no means accounts for the phenomenon: and, *secondly*, There is no evidence, nor even probability, that that cause exists.]

It is probable, that in perception some impression is made upon the brain as well as upon the organ and nerves, because all the nerves terminate in the brain, and because disorders and hurts of the brain are found to affect our powers of perception when the external organ and nerve are sound; but we are totally ignorant of the nature of this impression upon the brain: it can have no resemblance to the object perceived, nor does it in any degree account for that sensation and perception which are consequent upon it. These things have been argued in the second Essay, and shall now be taken for granted, to prevent repetition.

If the impression upon the brain be insufficient to account for the perception of objects that are present, it can as little account for the memory of those that are past.

So that if it were certain, that the impressions made on the brain in perception remain as long as there is any memory of the object; all that could be inferred from this is, that, by the laws of nature, there is a connexion established between that impression, and the remembrance of that object. But how the impression contributes to this remembrance, we should be quite ignorant; it being impossible to discover how thought of any kind should be produced, by an impression on the brain, or upon any part of the body.

To say that this impression is memory, is absurd, if understood literally. If it is only meant that it is the cause of memory, it ought to be shown how it produces this effect, otherwise memory remains as unaccountable as before.

III. ☞ If a philosopher should undertake to account for the force of gunpowder, in the discharge of a musket, and then tell us gravely, that the cause of this phenomenon is the drawing of the trigger, we should not be much wiser by this account. As little are we instructed in the cause of memory, by being told that it is caused by a certain impression on the brain. For sup-

posing, that impression on the brain were as necessary to memory as the drawing of the trigger is to the discharge of the musket, we are still as ignorant as we were how memory is produced; so that, if the cause of memory, assigned by this theory, did really exist, it does not in any degree account for memory.

Another defect in this theory is, that there is no evidence, nor probability that the cause assigned does exist; that is, that the impression made upon the brain in perception *remains after the object is removed.*

IV. *Five suppositions necessary to the support of this theory.* — [That impression, whatever be its nature, is caused by the impression made by the object upon the organ of sense, and upon the nerve. Philosophers suppose, without any evidence, (1) that when the object is removed, and the impression upon the organ and nerve ceases, the impression upon the *brain* continues, and is permanent; that is, that when the cause is removed the effect continues. The brain surely does not appear more fitted to retain an impression than the organ and nerve.]

[But granting that the impression upon the brain continues after its cause is removed, its effects ought to continue while it continues; that is, the *sensation and perception* should be as permanent as the impression upon the brain, which is supposed to be their cause. But here again the philosopher makes a second supposition, with as little evidence, but of a contrary nature, to wit, (2) that, *while the cause remains, the effect ceases.*]

[If this should be granted also, *a third* must be made, (3) That the *same cause*, which at first produced sensation and perception, does afterwards produce *memory;* an operation essentially different, both from sensation and perception.]

[A *fourth* supposition must be made, (4) That this cause, though it be permanent, *does not produce its effect at all times;* ☞ it must be like an inscription which is sometimes covered with rubbish, and on other occasions made legible: for the memory of things is often interrupted for a long time, and circumstances bring to our recollection what had been long forgot. (5) After all, many things are remembered *which were never perceived by the senses*, being no objects of sense, and therefore, which could make no impression upon the brain by means of the senses.]

Thus, when philosophers have piled one supposition upon another, as the giants piled the mountains, in order to scale the heavens, all is to no purpose, memory remains unaccountable; and we know as little how we remember things past, as how we are conscious of the present.

But here, it is proper to observe, that although impressions upon the brain give no aid in accounting for memory, yet it is very probable, that, in the human frame, memory is dependent on some proper state or temperament of the brain.

Although the furniture of our memory bears no resemblance to any temperament of brain whatsoever, as indeed it is impossible it should, yet nature may have subjected us to this law, that a certain constitution or state of the brain is necessary to memory. That this is really the case, many well-known facts lead us to conclude.

It is possible, that, by accurate observation, the proper means may be discovered of preserving that temperament of the brain which is favourable to memory, and of remedying the disorders of that temperament. This would be a very noble improvement of the medical art. But if it should ever be attained, it would give no aid to understand how one state of the brain assists memory, and another hurts it.

I know certainly, that the impression made upon my hand by the prick of a pin occasions acute pain. But can any philosopher show how this cause produces the effect? The nature of the impression is here perfectly known; but it gives no help to understand how that impression affects the mind; and if we knew as distinctly that state of the brain which causes memory, we should still be as ignorant as before how that state contributes to memory. We might have been so constituted, for anything that I know, that the prick of a pin in the hand, instead of causing pain, should cause remembrance; nor would that constitution be more unaccountable than the present.

V. *Limit to the investigation of the connexion between mind and body.*—[The body and mind operate on each other, according to fixed laws of nature; and it is the business of a philosopher to discover those laws by observation and experiment. But, when he has discovered them, he must rest in them as facts, whose cause is inscrutable to the human understanding.]

[Mr. Locke, and those who have followed him, speak with more reserve than the ancients, and only incidentally, of impressions on the brain as the cause of memory, and impute it rather to our retaining in our minds the ideas, got either by sensation or reflection.]

This, Mr. Locke says, may be done two ways: "*First*, by keeping the idea for some time actually in view, which is called *contemplation*. *Secondly*, by the power to revive again in our minds those ideas, which, after imprinting, have disappeared, or have been, as it were, laid out of sight; and this is memory, which is, as it were, the storehouse of our ideas."

To explain this more distinctly, he immediately adds the following observation: "But our ideas being nothing but actual perceptions in the mind, which cease to be any thing, when there is no perception of them, this laying up of our ideas in the repository of the memory, signifies no more but this, that the mind has a power, in many cases, to revive perceptions which it once

had, with this additional perception annexed to them, that it has had them before; and in this sense it is, that our ideas are said to be in our memories, when indeed they are actually nowhere; but only there is an ability in the mind, when it will, to revive them again, and, as it were, paint them anew upon itself, though some with more, some with less, difficulty, some more lively, and others more obscurely."

VI. *Locke's account of memory does not make us understand how we remember and have ideas of the past.*—In this account of memory, the repeated use of the phrase, ***as it were***, leads one to judge that it is partly figurative; we must therefore endeavour to distinguish the figurative part from the philosophical. The first being addressed to the imagination, exhibits a picture of memory, which, to have its effect, must be viewed at a proper distance, and from a particular point of view. The second being addressed to the understanding, ought to bear a near inspection, and a critical examination.

The analogy between memory and a repository, and between remembering and retaining, is obvious, and is to be found in all languages, it being very natural to express the operations of the mind by images taken from things material. But in philosophy we ought to draw aside the veil of imagery, and to view them naked.

When therefore memory is said to be a repository or storehouse of ideas, where they are laid up when not perceived, and again brought forth as there is occasion, I take this to be popular and rhetorical. For the author tells us, that when they are not perceived, they are nothing, and nowhere, and therefore can neither be laid up in a repository, nor drawn out of it.

But we are told, "That this laying up of our ideas in the repository of the memory signifies no more than this, that the mind has a power to revive perceptions, which it once had, with this additional perception annexed to them, that it has had them before." This, I think, must be understood literally and philosophically.

But it seems to me as difficult to revive things that have ceased to be anything, as to lay them up in a repository, or to bring them out of it. When a thing is once annihilated, the same thing cannot be again produced, though another thing *similar* to it may. Mr. Locke, in another place, acknowledges, that the same thing cannot have two beginnings of existence; and that things that have different beginnings are not the same, but diverse. [(1) From this it follows, that an ability to revive our ideas or perceptions, after they have ceased to be, can signify no more but an ability to create new ideas or perceptions *similar* to those we had before.]

[(2) They are said "to be revived, with this additional perception, that we have had them before." This, surely, would be a fallacious perception, since they could not have two beginnings of existence; nor could we believe them to have two beginnings of existence. We can only believe, that we had formerly ideas or perceptions *very like* to them, though not identically the same.] [But whether we perceive them to be the same, or only like to those we had before, this perception, one would think, *supposes a remembrance* of those we had before, otherwise the similitude or identity could not be perceived.]

[(3) Another phrase is used to explain this reviving of our perceptions. "The mind, as it were, paints them anew upon itself." There may be something figurative in this; but making due allowance for that, it must imply, that the mind, which paints the things that have ceased to exist, *must have the memory of what they were,* since every painter must have a copy either before his eye, or in his imagination and memory.]

These remarks upon Mr. Locke's account of memory are intended to show, that his system of ideas gives no light to this faculty, but rather tends to darken it; as little does it make us understand *how* we remember, and by that means have the certain knowledge of things past.

Every man knows what memory is, and has a distinct notion of it: but when Mr. Locke speaks of a power to revive in the mind those ideas, which, after imprinting, have disappeared, or have been, as it were, laid out of sight, one would hardly know this to be memory, if he had not told us. There are other things which it seems to resemble at least as much. I see before me the picture of a friend. I shut my eyes, or turn them another way; and the picture disappears, or is, as it were, laid out of sight. I have a power to turn my eyes again towards the picture, and immediately the perception is revived. But is this memory? no surely; yet it answers the definition as well as memory itself can do.

VII. *Incautious use of the term "perception."*—We may observe, that the word perception is used by Mr. Locke in too indefinite a way, as well as the word idea.

[Perception, in the chapter upon that subject, is said to be the first faculty of the mind exercised about our ideas. Here we are told, that ideas are nothing but perceptions: yet I apprehend it would sound oddly to say, that perception is the first faculty of the mind exercised about perception; and still more strangely to say, that ideas are the first faculty of the mind exercised about our ideas. But why should not ideas be a faculty as well as perception, if both are the same?]

Memory is said to be a power to revive our perceptions. Will

it not follow from this, that every thing that can be remembered is a perception? If this be so, it will be difficult to find any thing in nature but perceptions.

Our ideas, we are told, are nothing but actual perceptions; but in many places of the Essay, ideas are said to be the objects of perception, and that the mind, in all its thoughts and reasonings, has no other immediate object which it does or can contemplate but its own ideas. Does it not appear from this, either that Mr. Locke held the operations of the mind to be the same thing with the objects of those operations, or that he used the word idea sometimes in one sense and sometimes in another, without any intimation, and probably without any apprehension of its ambiguity? It is an article of Mr. Hume's philosophy, that there is no distinction between the operations of the mind and their objects. But I see no reason to impute this opinion to Mr. Locke. I rather think, that, notwithstanding his great judgment and candour, his understanding was entangled by the ambiguity of the word idea, and that most of the imperfections of his Essay are owing to that cause.

Mr. Hume saw farther into the consequences of the common system concerning ideas than any author had done before him. He saw the absurdity of making every object of thought double, and splitting it into a remote object, which has a separate and permanent existence, and an immediate object, called an idea or impression, which is an image of the former, and has no existence, but when we are conscious of it. According to this system, we have no intercourse with the external world, but by means of the internal world of ideas, which represents the other to the mind.

He saw it was necessary to reject one of these worlds as a fiction, and the question was, Which should be rejected? Whether all mankind, learned and unlearned, had feigned the existence of the external world without good reason? or whether philosophers had feigned the internal world of ideas, in order to account for the intercourse of the mind with the external? Mr. Hume adopted the first of these opinions, and employed his reason and eloquence in support of it.

Bishop Berkeley had gone so far in the same track as to reject the material world as fictitious; but it was left to Mr. Hume to complete the system.

VIII. *Hume's explanation of imagination and memory*—According to his system, therefore, impressions and ideas in his own mind are the only things a man can know, or can conceive: Nor are these ideas representatives, as they were in the old system. There is nothing else in nature, or at least within the reach of our faculties, to be represented. What the vulgar call the perception of an external object, is nothing but a strong

impression upon the mind. What we call the remembrance of a past event, is nothing but a present impression or idea, weaker than the former. And what we call imagination, is still a present idea, but weaker than that of memory.

That I may not do him injustice, these are his words in his "Treatise of Human Nature," page 193. (8vo. edition.)

["We find by experience, that when any impression has been present with the mind, it again makes its appearance there as an idea; and this it may do after two different ways, either when in its new appearance it retains a considerable degree of its first vivacity, and is somewhat intermediate betwixt an impression and an idea, or when it entirely loses that vivacity, and is a perfect idea. The faculty by which we repeat our impressions in the first manner is called the *memory*, and the other the *imagination*."]

Upon this account of memory and imagination I shall make some remarks.

First, I wish to know, what we are here to understand by experience? It is said, we find all this by experience; and I conceive nothing can be meant by this experience but memory. Not that memory which our author defines, but memory in the common acceptation of the word. According to vulgar apprehension, memory is an *immediate* knowledge of something past. [Our author does not admit that there is any such knowledge in the human mind. *He maintains that memory is nothing but a present idea or impression.* [But, in defining what he takes memory to be, *he takes for granted that kind of memory which he rejects.* For can we find by experience, that an impression, after its first appearance to the mind, makes a second, and a third, with different degrees of strength and vivacity, if we have not so distinct a remembrance of its first appearance, as enables us to know it, upon its second and third, notwithstanding that, in the interval, it has undergone a very considerable change?]

All experience supposes memory; and there can be no such thing as experience, without trusting to our own memory, or that of others: so that it appears from Mr. Hume's account of this matter, that he found himself to have that kind of memory, which he acknowledges and defines, by exercising that kind which he rejects.

[*Secondly*, What is it we find by experience or memory? It is, "That when an impression has been present with the mind, it *again* makes its appearance there as an idea, and that after two different ways."]

IX. *Hume's explanation involves a contradiction.*—[If experience informs us of this, it certainly deceives us; for the thing is impossible, and the author shows it to be so. Impressions and ideas are fleeting perishable things, which have no existence,

but when we are conscious of them. If an impression could make a second and a third appearance to the mind, it must have a continued existence during the interval of these appearances, which Mr. Hume acknowledges to be a gross absurdity. It seems then, that we find, by experience, a thing which is impossible. We are imposed upon by our experience, and made to believe contradictions.]

Perhaps it may be said, that these different appearances of the impression are not to be understood literally, but figuratively; that the impression is personified, and made to appear at different times, and in different habits, when no more is meant, but that an impression appears at one time; afterwards a thing of a middle nature, between an impression and an idea, which we call memory; and last of all a perfect idea, which we call imagination: that this figurative meaning agrees best with the last sentence of the period, where we are told, that memory and imagination are faculties, whereby we repeat our impressions in a more or less lively manner. To repeat an impression is a figurative way of speaking, which signifies making a new impression *similar* to the former.

X. *The only subterfuge that is obvious is doubly defective.*—If, to avoid the absurdity implied in the literal meaning, we understand the philosopher in this figurative one, then his definitions of memory and imagination, when stripped of the figurative dress, will amount to this, [That memory is the faculty of making a weak impression, and imagination the faculty of making an impression still weaker, after a corresponding strong one. These definitions of memory and imagination labour under two defects; *first*, That they convey no notion of the thing defined; and, *secondly*, That they may be applied to things of a quite different nature from those that are defined.]

When we are said to have a faculty of making a weak impression after a corresponding strong one, it would not be easy to conjecture that this faculty is memory. Suppose a man strikes his head smartly against the wall, this is an impression; now he has a faculty by which he can repeat this impression with less force, so as not to hurt him; this, by Mr. Hume's account, must be memory. He has a faculty by which he can just touch the wall with his head, so that the impression entirely loses its vivacity. This surely must be imagination; at least it comes as near to the definition given of it by Mr. Hume as anything I can conceive.

[*Thirdly*, We may observe, that when we are told—that we have a faculty of repeating our impressions in a more or less lively manner, this implies that *we* are the efficient causes of our ideas of memory and imagination; but this contradicts what the author says a little before, where he proves, by what he calls a

convincing argument, that *impressions* are the cause of their corresponding ideas.] [The argument that proves this had need indeed to be very convincing; whether we make the idea to be a second appearance of the impression, or a new impression similar to the former.

If the first be true, then the impression is the cause of itself. If the second, then the impression after it has gone, and has no existence, produces the idea.] Such are the mysteries of Mr. Hume's philosophy.

It may be observed, that the common system, that ideas are the only immediate objects of thought, leads to scepticism with regard to memory, as well as with regard to the objects of sense, whether those ideas are placed in the mind or in the brain.

Ideas are said to be things internal and present, which have no existence but during the moment they are in the mind. The objects of sense are things external, which have a continued existence. When it is maintained, that all that we immediately perceive is only ideas or phantasms, how can we from the existence of those phantasms, conclude the existence of an external world corresponding to them?

This difficult question seems not to have occurred to the Peripatetics. Des Cartes saw the difficulty, and endeavoured to find out arguments by which, from the existence of our phantasms or ideas, we might infer the existence of external objects. The same course was followed by Malebranche, Arnauld, and Locke; but Berkeley and Hume easily refuted all their arguments, and demonstrated that there is no strength in them.

XI. *The theory of ideas leads to scepticism as regards both our memory and our senses.*—[The same difficulty with regard to *memory* naturally arises from the system of ideas; and the only reason why it was not observed by philosophers, is, because they give less attention to the memory than to the senses: for since ideas are things *present*, how can we, from our having a certain idea presently in our mind, conclude that an event *really* happened ten or twenty years ago corresponding to it?]

There is the same need of arguments to prove, that the ideas of memory are pictures of things that really did happen, as that the ideas of sense are pictures of external objects which now exist. In both cases, it will be impossible to find any argument that has real weight. So that this hypothesis leads us to absolute scepticism, with regard to those things which we most distinctly remember, no less than with regard to the external objects of sense.

XII. *Hume more consistent than Berkeley.*—[It does not appear to have occurred either to Locke or to Berkeley, that their system has the same tendency to overturn the testimony of memory as the testimony of the senses.

Mr. Hume saw farther than both, and found this consequence of the system of ideas perfectly corresponding to his aim of establishing universal scepticism. His system is therefore more consistent than theirs, and the conclusions agree better with the premises.]

[But if we should grant to Mr. Hume, that our ideas of memory afford no just ground to believe the past existence of things which we remember, it may still be asked, how it comes to pass that perception and memory are accompanied with belief, while bare imagination is not? Though this belief cannot be justified upon his system, it ought to be accounted for as a phenomenon of human nature.]

This he has done, by giving us a new theory of belief in general; a theory which suits very well with that of ideas, and seems to be a natural consequence of it, and which at the same time reconciles all the belief that we find in human nature to perfect scepticism.

What then is this belief? It must either be an idea, or some modification of an idea; we conceive many things which we do not believe. The idea of an object is the same, whether we believe it to exist, or barely conceive it. The belief adds no new idea to the conception; it is therefore nothing but a modification of the idea of the thing believed, or a different manner of conceiving it. Hear himself:

XIII. *Hume's definition of belief.*—"All the perceptions of the mind are of two kinds, impressions and ideas, which differ from each other only in their different degrees of force and vivacity. Our ideas are copied from our impressions, and represent them in all their parts. When you would vary the idea of a particular object, you can only increase or diminish its force and vivacity: if you make any other change upon it, it represents a different object or impression. The case is the same as in colours. A particular shade of any colour may acquire a new degree of liveliness or brightness, without any other variation: but when you produce any other variation, it is no longer the same shade or colour. [So that as belief does nothing but vary the manner in which we conceive any object, it can only bestow on our ideas an additional force and vivacity.] An opinion, therefore, or belief, may be most accurately defined *a lively idea, related to or associated with a present impression*."]

This theory of belief is very fruitful of consequences, which Mr. Hume traces with his usual acuteness, and brings into the service of his system. A great part of his system indeed is built upon it; and it is of itself sufficient to prove what he calls his hypothesis, "that belief is more properly an act of the sensitive than of the cogitative part of our natures."

It is very difficult to examine this account of belief with the same gravity with which it is proposed. It puts one in mind of

the ingenious account given by Martinus Scriblerus of the power of syllogism, by making the *major* the male, and the *minor* the female, which being coupled by the middle *term*, generate the conclusion. There is surely no science in which men of great parts and ingenuity have fallen into such gross absurdities as in treating of the powers of the mind. I cannot help thinking, that never anything more absurd was gravely maintained by any philosopher, than this account of the nature of belief, and of the distinction of perception, memory, and imagination.

The belief of a proposition is an operation of mind of which every man is conscious, and what it is, he understands perfectly, though, on account of its simplicity, he cannot give a logical definition of it. If he compares it with the strength or vivacity of his ideas, or with any modification of ideas, they are so far from appearing to be one and the same, that they have not the least similitude.

That a strong belief and a weak belief differ only in degree, I can easily comprehend; but that belief and no belief should differ only in degree, no man can believe who understands what he speaks: for this is in reality to say that something and nothing differ only in degree, or that nothing is a degree of something.

XIV. *Its absurdity.*—[Every proposition that may be the object of belief, has a contrary proposition that may be the object of a contrary belief. The ideas of both, according to Mr. Hume, are the same, and differ only in degrees of vivacity. That is, *contraries differ only in degree*; and so pleasure may be a degree of pain, and hatred a degree of love.] But it is to no purpose to trace the absurdities that follow from this doctrine, for none of them can be more absurd than the doctrine itself.

Every man knows perfectly what it is to see an object with his eyes, what it is to remember a past event, and what it is to conceive a thing which has no existence. That these are quite different operations of his mind, he is as certain as that sound differs from colour, and both from taste; and I can as easily believe that sound, and colour, and taste, differ only in degree, as that seeing, and remembering, and imagining, differ only in degree.

Mr. Hume, in the third volume of his "Treatise of Human Nature," is sensible that his theory of belief is liable to strong objections, and seems, in some measure, to retract it; but in what measure, it is not easy to say. He seems still to think that belief is only a modification of the idea, but that vivacity is not a proper term to express that modification. Instead of it he uses some analogical phrases to explain that modification, such as "apprehending the idea more strongly, or taking faster hold of it."

There is nothing more meritorious in a philosopher than to retract an error upon conviction; but in this instance I humbly apprehend Mr. Hume claims that merit upon too slight a ground:

for I cannot perceive that the apprehending an idea more strongly, or taking faster hold of it, expresses any other modification of the idea than what was before expressed by its strength and vivacity, or even that it expresses the same modification more properly. Whatever modification of the idea he makes belief to be, whether its vivacity, or some other without a name, to make perception, memory, and imagination, to be the different degrees of that modification, is chargeable with the absurdities we have mentioned.

Before we leave this subject of memory, it is proper to take notice of a distinction which Aristotle makes between memory and reminiscence, because the distinction has a real foundation in nature, though in our language I think we do not distinguish them by different names.

XV. *Three degrees of memory.*—[Memory is a kind of habit which is not always in exercise with regard to things we remember, but is ready to suggest them when there is occasion. The most perfect degree of this habit is, when *the thing presents itself to our remembrance spontaneously*, and without labour, as often as there is occasion. A second degree is, when the thing is forgot for a longer or shorter time, even when there is occasion to remember it, *yet at last some incident brings it to mind without any search.* A third degree is, *when we cast about and search for what we would remember*, and so at last find it out.] It is this last, I think, which Aristotle calls reminiscence, as distinguished from memory.*

XVI. *Difficulty as to reminiscence answered.*—[*Reminiscence*, therefore, includes a will to recollect something past, and a search for it. But here a difficulty occurs. It may be said, that what we will to remember we must conceive, as there can be no will without a conception of the thing willed.] A will to remember a thing, therefore, seems to imply that we remember it already, and have no occasion to search for it. [But this difficulty is easily removed. When we will to remember a thing, we must remember *something relating to it*, which gives us a relative conception of it; but we may, at the same time, have no conception what the thing is, but only what relation it bears to something else.] Thus, I remember that a friend charged me with a commission to be executed at such a place; but I have forgot what the commission was. By applying my thought to what I remember concerning it, that it was given by such a person, upon such an occasion, in consequence of such a conversation, I am led, in a train of thought, to the very thing I had forgot, and recollect distinctly what the commission was.

* "If it (the idea) be sought after by the mind, and with pain and endeavour found and brought again in view, 'tis *Recollection.*" Locke, Book II. Chap. xix. sect. 1.

XVII. *The memory of brutes different from that of men.*—Aristotle says, that brutes have not reminiscence, and this I think is probable; but, says he, they have memory. It cannot, indeed, be doubted but they have something very like to it, and in some instances in a very great degree. A dog knows his master after long absence. ☞ A horse will trace back a road he has once gone as accurately as a man; and this is the more strange, that the train of thought which he had in going must be reversed in his return. It is very like to some prodigious memories we read of, where a person, upon hearing a hundred names or unconnected words pronounced, can begin at the last, and go backwards to the first, without losing or misplacing one. Brutes certainly may learn much from experience, which seems to imply memory.

[Yet I see no reason to think that brutes measure time as men do, by days, months, or years, or that they have any distinct knowledge of the interval between things which they remember, or of their distance from the present moment. If we could not record transactions according to their dates, human memory would be something very different from what it is, and perhaps resemble more the memory of brutes.]

QUESTIONS FOR EXAMINATION.

How do the Peripatetics explain imagination and memory?

Cause of the defect of memory, according to Aristotle?

Error of this theory?

Five suppositions necessary to maintain it?

How far is the connexion between mind and body capable of being investigated?

In what respect does Locke differ from the ancient philosophers?

How must he be understood in his explication of memory?

This power of renewing our ideas or of creating others similar to them does not explain memory?

How does it appear that Locke uses the term "perception" in too indefinite a sense?

How does Hume describe or explain perception, memory, and imagination?

He acknowledges memory in the vulgar signification, which he endeavours to explain by his own theory?

Defect of the subterfuge he employs to evade the absurdity of his reasoning?

The theory of ideas overthrows the evidence of memory as well as that of the senses?

Hume more consistent than Berkeley?

Define opinion or belief according to Hume?

Absurdity of this definition?

Three degrees of memory?

Difficulty as to reminiscence answered?

In what respect does the memory of man differ from that of inferior animals?

ESSAY IV.

OF CONCEPTION.

CHAPTER I.

OF CONCEPTION, OR SIMPLE APPREHENSION IN GENERAL.

I. *Logicians give a* quasi *definition of simple apprehension.*—Conceiving, imagining, apprehending, understanding, having a notion of a thing, are common words used to express that operation of the understanding, which the logicians call *simple apprehension.* The having an idea of a thing, is in common language used in the same sense, chiefly I think since Mr. Locke's time.

Logicians define simple apprehension to be the bare conception of a thing without any judgment or belief about it. If this were intended for a strictly logical definition, it might be a just objection to it, that conception and apprehension are only synonymous words; and that we may as well define conception by apprehension, as apprehension by conception; but it ought to be remembered, that the most simple operations of the mind cannot be logically defined. To have a distinct notion of them, we must attend to them as we feel them in our own minds. He that would have a distinct notion of a scarlet colour, will never attain it by a definition; he must set it before his eye, attend to it, compare it with the colours that come nearest to it, and observe the specific difference, which he will in vain attempt to define.

Every man is conscious that he can conceive a thousand things, of which he believes nothing at all; as a horse with wings, a mountain of gold; but although conception may be without any degree of belief, even the weakest belief cannot be without conception. He that believes, must have some conception of what he believes.

Without attempting a definition of this operation of the mind, I shall endeavour to explain some of its properties; consider the theories about it; and take notice of some mistakes of philosophers concerning it.

II. *First characteristic property of conception.*—[1. It may be observed, that conception enters as an ingredient in every operation of the mind:] our senses cannot give us the belief of any object, without giving some conception of it at the same

time: no man can either remember or reason about things of which he hath no conception: when we will to exert any of our active powers, there must be some conception of what we will to do: there can be no desire nor aversion, love nor hatred, without some conception of the object: we cannot feel pain without conceiving it, though we can conceive it without feeling it. These things are self-evident.

In every operation of the mind, therefore, in every thing we call thought, there must be conception: when we analyse the various operations either of the understanding or of the will, we shall always find this at the bottom, like the "caput mortuum" of the chemists, or the "materia prima" of the Peripatetics; but though there is no operation of mind without conception, yet it may be found naked, detached from all others, and then it is called simple apprehension, or the bare conception of a thing.

As all the operations of our mind are expressed by language, every one knows that it is one thing to understand what is said, to conceive or apprehend its meaning, whether it be a word, a sentence, or a discourse; it is another thing to judge of it, to assent or dissent, to be persuaded or moved. The first is simple apprehension, and may be without the last, but the last cannot be without the first.

III. *Second characteristic property of conception.*—[2. In bare conception there can neither be truth nor falsehood, because it neither affirms nor denies.] Every judgment, and every proposition by which judgment is expressed, must be true or false; and the qualities of true and false, in their proper sense, can belong to nothing but to judgments, or to propositions which express judgment. In the bare conception of a thing there is no judgment, opinion, or belief included, and therefore it cannot be either true or false.

IV. *Conceptions may be true or false in one particular sense.*—But it may be said, Is there any thing more certain than that men may have true or false conceptions, true or false apprehensions, of things? I answer, That such ways of speaking are indeed so common, and so well authorised by custom the arbiter of language, that it would be presumption to censure them. It is hardly possible to avoid using them. But we ought to be upon our guard that we be not misled by them, to confound things which, though often expressed by the same words, are really different. We must therefore remember what was before observed, Essay I. chap. i. [That all the words, by which we signify the bare conception of a thing, are likewise used to signify our *opinions* when we wish to express them with modesty and diffidence. And we shall always find, that, when we speak of true or false conceptions, we mean true or false opinions.] An opinion, though ever so wavering, or ever so modestly expressed,

must be either true or false; but a bare conception, which expresses no opinion or judgment, can be neither.

If we analyse those speeches, in which men attribute truth or falsehood to our conceptions of things, we shall find in every case, that there is some opinion or judgment implied in what they call conception. A child conceives the moon to be flat, and a foot or two broad; that is, this is his opinion: and when we say it is a false notion, or a false conception, we mean that it is a false opinion. He conceives the city of London to be like his country village; that is, he believes it to be so, till he is better instructed. He conceives a lion to have horns; that is, he believes that the animal which men call a lion, has horns. Such opinions language authorises us to call conceptions; and they may be true or false. But bare conception, or what the logicians call simple apprehension, implies no opinion, however slight, and therefore can neither be true nor false.

V. *Of true and false ideas.*—What Mr. Locke says of ideas (by which word he very often means nothing but conceptions) is very just, when the word idea is so understood, book ii. chap. xxxii. sect. 1: "Though truth and falsehood belong in propriety of speech only to propositions, yet ideas are often termed true or false, (as what words are there that are not used with great latitude, and with some deviation from their strict and proper signification;) though I think, that when ideas themselves are termed true or false, there is still some secret or tacit proposition, which is the foundation of that denomination; as we shall see, if we examine the particular occasions wherein they come to be called true or false; in all which we shall find some kind of affirmation or negation, which is the reason of that denomination: for our ideas being nothing but bare appearances, or perceptions in our minds, cannot properly and simply in themselves be said to be true or false, no more than a simple name of any thing can be said to be true or false."

It may be here observed by the way, that in this passage, as in many others, Mr. Locke uses the word *perception*, as well as the word *idea*, to signify what I call conception, or simple apprehension. And in his chapter upon perception, book ii. chap. ix. he uses it in the same sense. "Perception," he says, "as it is the first faculty of the mind, exercised about our ideas; so it is the first and simplest idea we have from reflection, and is by some called thinking in general. It seems to be that which puts the distinction betwixt the animal kingdom and the inferior parts of nature. It is the first operation of all our faculties, and the inlet of all knowledge into our minds."

VI. *Locke confounds perception and conception.*—[Mr. Locke has followed the example given by Des Cartes, Gassendi, and other Cartesians, in giving the name of *perception* to the bare

conception of things: and he has been followed in this by Bishop Berkeley, Mr. Hume, and many late philosophers, when they treat of ideas. They have probably been led into this impropriety, by the common doctrine concerning ideas, which teaches us, that conception, perception by the senses, and memory, are only different ways *of perceiving ideas in our own minds.*] If that theory be well founded, it will indeed be very difficult to find any specific distinction between conception and perception. But there is reason to distrust any philosophical theory, when it leads men to corrupt language, and to confound, under one name, operations of the mind, which common sense and common language teach them to distinguish.

I grant that there are some states of the mind, wherein a man may confound his conceptions with what he perceives or remembers, and mistake the one for the other; as, in the delirium of a fever, in some cases of lunacy and of madness, in dreaming, and perhaps in some momentary transports of devotion, or of other strong emotions, which cloud his intellectual faculties, and for a time carry a man out of himself, as we usually express it.

Even in a sober and sound state of mind, the memory of a thing may be so very weak, that we may be in doubt whether we only dreamed or imagined it.

It may be doubted, whether children, when their imagination first begins to work, can distinguish what they barely conceive from what they remember. I have been told by a man of knowledge and observation, that one of his sons, when he began to speak, very often told lies with great assurance, without any intention, as far as appeared, or any consciousness of guilt. From which the father concluded, that it is natural to some children to lie. I am rather inclined to think, that the child had no intention to deceive, but mistook the rovings of his own fancy, for things which he remembered. This, however, I take to be very uncommon, after children can communicate their sentiments by language, though perhaps not so in a more early period.

Granting all this, if any man will affirm, that they whose intellectual faculties are sound, and sober, and ripe, cannot with certainty distinguish what they perceive or remember, from what they barely conceive, when those operations have any degree of strength and distinctness, he may enjoy his opinion; I know not how to reason with him. Why should philosophers confound those operations in treating of ideas, when they would be ashamed to do it on other occasions? To distinguish the various powers of our minds, a certain degree of understanding is necessary; and if some, through a defect of understanding, natural or accidental, or from unripeness of understanding, may be apt to confound different powers, will it follow that others cannot clearly distinguish them?

To return from this digression, into which the abuse of the word perception by philosophers has led me, it appears evident that the bare conception of an object, which includes no opinion or judgment, can neither be true nor false. Those qualities, in their proper sense, are altogether inapplicable to this operation of the mind.

VII.—*Illustration of conception.*—[3. Of all the analogies between the operations of body and those of the mind, there is none so strong and so obvious to all mankind as that which there is between *painting*, or other plastic arts, and the power of conceiving objects in the mind.] Hence in all languages, the words by which this power of the mind and its various modifications are expressed are analogical, and borrowed from those arts. We consider this power of the mind as a plastic power, by which we form to ourselves images of the objects of thought.

In vain should we attempt to avoid this analogical language, for we have no other language upon the subject; yet it is dangerous, and apt to mislead. All analogical and figurative words have a double meaning; and, if we are not very much upon our guard, we slide insensibly from the borrowed and figurative meaning into the primitive. We are prone to carry the parallel between the things compared farther than it will hold, and thus very naturally to fall into error.

To avoid this as far as possible in the present subject, it is proper to attend to the dissimilitude between conceiving a thing in the mind, and painting it to the eye, as well as to their similitude. The similitude strikes and gives pleasure. The dissimilitude we are less disposed to observe. But the philosopher ought to attend to it, and to carry it always in mind, in his reasonings on this subject, as a monitor, to warn him against the errors into which the analogical language is apt to draw him.

When a man paints, there is some work done, *which remains when his hand is taken off, and continues to exist, though he should think no more of it.* Every stroke of his pencil produces an effect, and this effect is different from his action in making it; for it remains and continues to exist when the action ceases. The action of painting is one thing, the picture produced is another thing. The first is the cause, the second is the effect.

VIII. *This analogy defective.*—Let us next consider what is done when he only conceives this picture. He must have conceived it before he painted it: for this is a maxim universally admitted, that every work of art must first be conceived in the mind of the operator. What is this conception? It is an act of the mind, a kind of thought. This cannot be denied. But does it produce any effect besides the act itself? Surely common sense answers this question in the negative: for every one knows, that it is one thing to conceive, another thing to bring forth

into effect. It is one thing to project, another to execute. A man may think for a long time what he is to do, and after all do nothing. [Conceiving as well as projecting or resolving, are what the schoolmen called *immanent* acts of the mind, which produce nothing beyond themselves. But painting is a *transitive* act, which produces an effect distinct from the operation, and this effect is the picture. Let this therefore be always remembered, that what is commonly called the image of a thing in the mind is no more than the act or operation of the mind in conceiving it.]

That this is the common sense of men who are untutored by philosophy, appears from their language. If one ignorant of the language should ask, What is meant by conceiving a thing? we should very naturally answer, That it is having an image of it in the mind; and perhaps we could not explain the word better. This shows, that conception, and the image of a thing in the mind, are synonymous expressions. The image in the mind, therefore, is not the object of conception, nor is it any effect produced by conception as a cause. It is conception itself. That very mode of thinking, which we call conception, is by another name called an image in the mind.

Nothing more readily gives the conception of a thing than the seeing an image of it. ☞ Hence, by a figure common in language, conception is called an image of the thing conceived. But to show that it is not a real but a metaphorical image, it is called an image in the mind. We know nothing that is properly in the mind but thought; and when any thing else is said to be in the mind, the expression must be figurative, and signify some kind of thought.

I know that philosophers very unanimously maintain, that in conception there is a real image in the mind, which is the immediate object of conception, and distinct from the act of conceiving it. I beg the reader's indulgence to defer what may be said for or against this philosophical opinion to the next chapter; intending in this only to explain what appears to me to belong to this operation of mind, without considering the theories about it. I think it appears from what has been said, that the common language of those who have not imbibed any philosophical opinion upon this subject, authorizes us to understand *the conception of a thing, and an image of it in the mind*, not as two different things, but as two different expressions, to signify one and the same thing; and I wish to use common words in their common acceptation.

IX. *Its true extent.*—[4. Taking along with us what is said in the last article, to guard us against the seduction of the analogical language used on this subject, we may observe a very strong analogy, not only between conceiving and painting in general, but between the different kinds of our conceptions, and the dif-

ferent works of the painter. (1) He either makes fancy pictures, or (2) he copies from the painting of others, or (3) he paints from the life; that is, from real objects of art or nature which he has seen.] I think our conceptions admit of a division very similar.

X. *Peculiarity of the first kind of conceptions.*—*First,* there are conceptions which may be called fancy pictures. They are commonly called creatures of fancy, or of imagination. They are not the copies of any original that exists, but are originals themselves. Such was the conception which Swift formed of the island of Laputa and of the country of the Lilliputians; Cervantes of Don Quixote and his squire; Harrington of the government of Oceana; and Sir Thomas More of that of Utopia. We can give names to such creatures of imagination, conceive them distinctly, and reason consequentially concerning them, though they never had an existence. They were conceived by their creators, and may be conceived by others, but they never existed. [*We do not ascribe the qualities of true or false to them,* because they are not accompanied with any belief, nor do they imply any affirmation or negation.]

[Setting aside those creatures of imagination, there are other conceptions, which may be called copies, because they have an original or archetype to which they refer, and with which they are believed to agree; *and we call them true or false conceptions,* according as they agree or disagree with the standard to which they are referred.] These are of two kinds, which have different standards or originals.

The *first* kind is analogous to pictures taken from the life. We have conceptions of *individual things* that really exist, such as the city of London, or the government of Venice. Here the things conceived are the originals; and our conceptions are called true when they agree with the thing conceived. Thus, my conception of the city of London is true when I conceive it to be what it really is.

XI. *Peculiarity of the second kind.*—[*Individual things which really exist,* being the creatures of God, (though some of them may receive their outward form from man,) he only who made them knows their whole nature; we know them but in part, and therefore *our conceptions of them must in all cases be imperfect and inadequate;* yet they may be true and just, as far as they reach.]

XII. *Of the third kind.*—[The *second* kind is analogous to the copies which the painter makes from pictures done before. Such I think are the conceptions we have of what the ancients called *universals;* that is, of things which belong or may belong to many individuals.] These are kinds and species of things; such as, man, or elephant, which are species of substances; wisdom, or courage, which are species of qualities; equality, or

similitude, which are species of relations. It may be asked, from what original are these conceptions formed? and when are they said to be true or false?

It appears to me, that the original from which they are copied, that is, the thing conceived, is the conception or meaning which other men who understand the language affix to the same words.

Things are parcelled into kinds and sorts, not by nature, but by men. The individual things we are connected with, are so many, that to give a proper name to every individual would be impossible. We could never attain the knowledge of them that is necessary, nor converse and reason about them, without sorting them according to their different attributes. Those that agree in certain attributes are thrown into one parcel, and have a general name given them, which belongs equally to every individual in that parcel. This common name must therefore signify those attributes which have been observed to be common to every individual in that parcel, and nothing else.

That such general words may answer their intention, all that is necessary is, that those who use them should affix the same meaning or notion, that is, the same conception to them. The common meaning is the standard by which such conceptions are formed, and they are said to be true or false, according as they agree or disagree with it. Thus, my conception of felony is true and just, when it agrees with the meaning of that word in the laws relating to it, and in authors who understand the law. The meaning of the word is the thing conceived; and that meaning is the conception affixed to it by those who best understand the language.

XIII. *Two modes of expressing an individual.*—[An individual is expressed in language (1) either by a proper name, or (2) by a general word joined to such circumstances as distinguish that individual from all others;] if it is unknown, it may, when an object of sense and within reach, be pointed out to the senses; when beyond the reach of the senses, it may be ascertained by a description, which, though very imperfect, may be true and sufficient to distinguish it from every other individual. Hence it is, that, in speaking of individuals, we are very little in danger of mistaking the object, or taking one individual for another.

[Yet, as was before observed, our conception of them is always inadequate and lame. They are the creatures of God, and there are many things belonging to them which we know not, and which cannot be deduced by reasoning from what we know: they have a real essence, or constitution of nature, from which all their qualities flow; but this essence our faculties do not comprehend:] they are therefore incapable of definition; for a definition ought to comprehend the whole nature or essence of the thing defined.

Thus, Westminster bridge is an individual object; though I had never seen or heard of it before, if I am only made to conceive that it is a bridge from Westminster over the Thames, this conception, however imperfect, is true, and is sufficient to make me distinguish it, when it is mentioned, from every other object that exists. The architect may have an adequate conception of its structure, which is the work of man; but of the materials, which are the work of God, no man has an adequate conception; and therefore, though the object may be described, it cannot be defined.

XIV. *General conceptions adequate, and agree with the thing conceived.*—Universals are always expressed by general words: and all the words of language, excepting proper names, are general words; they are the signs of general conceptions, or of some circumstance relating to them. [These general conceptions are formed for the purpose of language and reasoning; and the object from which they are taken, and to which they are intended to agree, is the conception which other men join to the same words; *they may therefore be adequate, and perfectly agree with the thing conceived.* This implies no more than that men who speak the same language may perfectly agree in the meaning of many general words.]

☞ Thus mathematicians have conceived what they call a plane triangle. They have defined it accurately; and when I conceive it to be a plane surface, bounded by three right lines, I have both a true and an adequate conception of it. There is nothing belonging to a plane triangle which is not comprehended in this conception of it, or deducible from it by just reasoning. This definition expresses the whole essence of the thing defined, as every just definition ought to do; but this essence is only what Mr. Locke very properly calls a nominal essence; it is a general conception formed by the mind, and joined to a general word as its sign.

If all the general words of a language had a precise meaning, and were perfectly understood, as mathematical terms are, all verbal disputes would be at an end, and men would never seem to differ in opinion, but when they differ in reality; but this is far from being the case. The meaning of most general words is not learned like that of mathematical terms, by an accurate definition, but by the experience we happen to have, by hearing them used in conversation. From such experience we collect their meaning by a kind of induction; and as this induction is for the most part lame and imperfect, it happens that different persons join different conceptions to the same general word; and though we intend to give them the meaning which use, the arbiter of language, has put upon them, this is difficult to find, and apt to be mistaken, even by the candid and attentive. Hence,

in innumerable disputes, men do not really differ in their judgments, but in the way of expressing them.

XV. *Three kinds of conceptions.*—[Our conceptions, therefore, appear to be of three kinds: they are either the conceptions of individual things, the creatures of God; or they are conceptions of the meaning of general words; or they are the creatures of our own imagination; and these different kinds have different *properties* which we have endeavoured to describe.]

XVI. *Of conceptions that are the most lively.*—5. Our conception of things may be strong and lively, or it may be faint and languid in all degrees. These are qualities which properly belong to our conceptions, though we have no names for them but such as are analogical. Every man is conscious of such a difference in his conceptions, and finds his lively conceptions most agreeable, when the object is not of such a nature as to give pain.

Those who have lively conceptions, commonly express them in a lively manner, that is, in such a manner as to raise lively conceptions and emotions in others. Such persons are the most agreeable companions in conversation, and the most acceptable in their writings.

The liveliness of our conceptions proceeds from different causes. Some objects from their own nature, or from accidental associations, are apt to raise strong emotions in the mind. Joy and hope, ambition, zeal, and resentment tend to enliven our conceptions: disappointment, disgrace, grief, and envy, tend rather to flatten them. Men of keen passions are commonly lively and agreeable in conversation; and dispassionate men often make dull companions: there is in some men a natural strength and vigour of mind, which gives strength to their conceptions on all subjects, and in all the occasional variations of temper.

[It seems easier to form a lively conception of objects that are familiar, than of those that are not; our conceptions of *visible* objects are commonly the most lively, when other circumstances are equal: hence poets not only delight in the description of visible objects, but find means by metaphor, analogy, and allusion, to clothe every object they describe with visible qualities:] the lively conception of these makes the object appear, as it were, before our eyes. Lord Kames, in his "Elements of Criticism," has shown of what importance it is in works of taste, to give to objects described, what he calls *ideal presence*. To produce this in the mind, is indeed the capital aim of poetical and rhetorical description. It carries the man, as it were, out of himself, and makes him a spectator of the scene described. This ideal presence seems to me to be nothing else but a lively conception of the appearance which the object would make if really present to the eye.

[Abstract and general conceptions are never lively, though

they may be distinct; and therefore, however necessary in philosophy, seldom enter into poetical description, without being particularised or clothed in some visible dress.]

It may be observed, however, that our conceptions of visible objects become more lively by giving them motion, and more still by giving them life, and intellectual qualities. Hence in poetry, the whole creation is animated, and endowed with sense and reflection.

XVII. *Distinction between imagination and conception.*—[Imagination, when it is distinguished from conception, seems to me to signify one species of conception; to wit, *the conception of visible objects.* Thus, in a mathematical proposition, I imagine the figure, and I conceive the demonstration; it would not I think be improper to say, I conceive both; but it would not be so proper to say, I imagine the demonstration.]*

XVIII. *Difference in our conceptions as to their liveliness and their distinctness.*—[6. Our conceptions of things may be clear, distinct, and steady; or they may be obscure, indistinct, and wavering. The *liveliness* of our conceptions gives *pleasure*, but it is their *distinctness* and steadiness that enables us to *judge right*, and to express our sentiments with perspicuity.]

If we inquire into the cause, why among persons speaking or writing on the same subject, we find in one so much darkness, in another so much perspicuity; I believe the chief cause will be found to be, that one had a distinct and steady conception of what he said or wrote, and the other had not: men generally find means to express distinctly what they have conceived distinctly. Horace observes, that proper words spontaneously follow distinct conceptions. "Verbaque provisam rem non invita sequuntur." But it is impossible that a man should distinctly express what he has not distinctly conceived.

We are commonly taught that perspicuity depends upon a proper choice of words, a proper structure of sentences, and a proper order in the whole composition. All this is very true, but it supposes distinctness in our conceptions, without which there can be neither propriety in our words, nor in the structure of our sentences, nor in our method.

XIX. *Indistinct conceptions the cause of errors of judgment.*—[Nay, I apprehend, that indistinct conceptions of things are, for the most part, the cause not only of obscurity in writing and speaking, but of error in judging.

Must not they who conceive things in the same manner form the same judgment of their agreements and disagreements? Is it possible for two persons to differ with regard to the conclusion of a syllogism who have the same conception of the premises?]

Some persons find it difficult to enter into a mathematical

* The author applies this distinction in Essay V. chap. vi. sect. x.

demonstration. I believe we shall always find the reason to be, that they do not distinctly apprehend it. A man cannot be convinced by what he does not understand. On the other hand, I think a man cannot understand a demonstration without seeing the force of it. I speak of such demonstrations as those of Euclid, where every step is set down, and nothing left to be supplied by the reader.

Sometimes one who has got through the first four books of Euclid's Elements, and sees the force of the demonstrations, finds difficulty in the fifth. What is the reason of this? You may find, by a little conversation with him, that he has not a clear and steady conception of ratios and of the terms relating to them. When the terms used in the fifth book have become familiar, and readily excite in his mind a clear and steady conception of their meaning, you may venture to affirm that he will be able to understand the demonstrations of that book, and to see the force of them.

[If this be really the case, as it seems to be, it leads us to think that men are very much upon a level with regard to mere judgment, when we take that faculty apart from the apprehension or conception of the things about which we judge; so that a sound judgment seems to be the inseparable companion of a clear and steady apprehension:] and we ought not to consider these two as talents, of which the one may fall to the lot of one man, and the other to the lot of another, but as talents which always go together.

XX. *Our conceptions of individuals do not enable us to enter into abstract reasoning.*—[It may, however, be observed, that some of our conceptions may be more subservient to reasoning than others which are equally clear and distinct. It was before observed, that some of our conceptions are of *individual* things, others of things *general and abstract*. It may happen, that a man who has very clear conceptions of things individual, is not so happy in those of things general and abstract. And this I take to be the reason why we find men who have good judgment in matters of common life, and perhaps good talents for poetical or rhetorical composition, who find it very difficult to enter into abstract reasoning.]

XXI. *Des Cartes' definition of judgment.*—That I may not appear singular in putting men so much upon a level in point of mere judgment, I beg leave to support this opinion by the authority of two very thinking men, Des Cartes and Cicero. The former, in his Dissertation on Method, expresses himself to this purpose: "Nothing is so equally distributed among men as judgment. Wherefore it seems reasonable to believe, that *the power of distinguishing what is true from what is false,* (which we properly call judgment or right reason), is by nature equal in

all men; and therefore that the diversity of our opinions does not arise from one person being endowed with a greater power of reason than another, but only from this, that we do not lead our thoughts in the same track, nor attend to the same things."

Cicero, in his third book "De Oratore," makes this observation, "It is wonderful, when the learned and unlearned differ so much in art, how little they differ in judgment. For art being derived from nature, is good for nothing, unless it move and delight nature."

From what has been said in this article, it follows, that it is so far in our power to write and speak perspicuously, and to reason justly, as it is in our power to form clear and distinct conceptions of the subject on which we speak or reason. And though nature hath put a wide difference between one man and another in this respect, yet that it is in a very considerable degree in our power to have clear and distinct apprehensions of things about which we think and reason, cannot be doubted.

XXI. *We are limited as to the ingredients of our conceptions.*—[7. It has been observed by many authors, that, when we barely conceive any object, the ingredients of that conception must either be (1) things with which we were before acquainted by some other original power of the mind, or they must be (2) parts or attributes of such things. Thus a man cannot conceive colours, if he never saw, nor sounds, if he never heard. If a man had not a conscience, he could not conceive what is meant by moral obligation, or by right and wrong in conduct.]

Fancy may combine things that never were combined in reality. It may enlarge or diminish, multiply or divide, compound and fashion the objects which nature presents; but it cannot, by the utmost effort of that creative power which we ascribe to it, bring any one simple ingredient into its productions, which nature has not framed, and brought to our knowledge by some other faculty.

This Mr. Locke has expressed as beautifully as justly. "The dominion of man, in this little world of his own understanding, is much the same as in the great world of visible things; wherein his power, however managed by art and skill, reaches no farther than to compound and divide the materials that are made to his hand, but can do nothing towards making the least particle of matter, or destroying one atom that is already in being. The same inability will every one find in himself, to fashion in his understanding any simple idea not received by the powers which God has given him."

Except in one case.—☞ I think all philosophers agree in this sentiment. [Mr. Hume, indeed, after acknowledging the truth of the principle in general, mentions what he thinks a single exception to it. That a man, who had seen all the shades of a

particular colour except one, might frame in his mind a conception of that shade which he never saw. I think this is not an exception; because a particular shade of a colour differs not *specifically*, but only in *degree*, from other shades of the same colour.]

XXII. *Our most simple conceptions.*—[It is proper to observe, that our most simple conceptions are not those which nature immediately presents to us.] When we come to years of understanding, we have the power of analysing the objects of nature, of distinguishing their several attributes and relations, of conceiving them one by one, and of giving a name to each, whose meaning extends only to that single attribute or relation: and thus our most simple conceptions are not those of any object in nature, but of some single attribute or relation of such objects.

Thus nature presents to our senses, bodies that are extended in three dimensions, and solid. By analysing the notion we have of body from our senses, we form to ourselves the conceptions of extension, solidity, space, a point, a line, a surface; all which are more simple conceptions than that of a body. [But they are the elements, as it were, of which our conception of a body is made up, and into which it may be analysed. This power of analysing objects we propose to consider particularly in another place. It is only mentioned here, that what is said in this article may not be understood so as to be inconsistent with it.]

8. Though our conceptions must be confined to the ingredients mentioned in the last article, we are unconfined with regard to the arrangement of those ingredients. Here we may pick and choose, and form an endless variety of combinations and compositions, which we call creatures of the imagination. These may be clearly conceived, though they never existed: and indeed every thing that is made, must have been conceived before it was made. Every work of human art, and every plan of conduct, whether in public or in private life, must have been conceived before it is brought to execution. And we cannot avoid thinking, that the Almighty, before he created the universe by his power, had a distinct conception of the whole and of every part, and saw it to be good, and agreeable to his intention.

XXIII. *The power of combining unlimited, and its possession a distinction between brute animals and man.*—It is the business of man, as a rational creature, to employ this unlimited power of conception, for planning his conduct and enlarging his knowledge. It seems to be peculiar to beings endowed with reason to act by a preconceived plan. [Brute animals seem either to want this power, or to have it in a very low degree. They are moved by instinct, habit, appetite, or natural affection, according as these principles are stirred by the present occasion. But I

see no reason to think that they can propose to themselves *a connected plan of life, or form general rules of conduct.* Indeed, we see that many of the human species, to whom God has given this power, make little use of it.] They act without a plan, as the passion or appetite which is strongest at the time leads them.

XXIV. *Essential difference of this faculty.*—[9. The last property I shall mention of this faculty, is that which essentially distinguishes it from every other power of the mind; and it is, *that it is not employed solely about things which have existence.*] I can conceive a winged horse or a centaur, as easily and as distinctly as I can conceive a man whom I have seen. Nor does this distinct conception incline my judgment in the least to the belief, that a winged horse or a centaur ever existed.

It is not so with the other operations of our minds. They are employed about real existences, and carry with them the belief of their objects. When I feel pain, I am compelled to believe that the pain that I feel has a real existence. When I perceive any external object, my belief of the real existence of the object is irresistible. When I distinctly remember any event, though that event may not now exist, I can have no doubt but it did exist. That consciousness which we have of the operations of our own minds, implies a belief of the real existence of those operations.

Thus we see, that the powers of sensation, of perception, of memory, and of consciousness, are all employed solely about objects that do exist, or have existed. But conception is often employed about objects that neither do, nor did, nor will exist. This is the very nature of this faculty, that its object, though distinctly conceived, may have no existence. Such an object we call a creature of imagination; but this creature never was created.

That we may not impose upon ourselves in this matter, we must distinguish between that act or operation of the mind, which we call conceiving an object, and the object which we conceive. When we conceive any thing, there is a real act or operation of the mind; of this we are conscious, and can have no doubt of its existence: but every such act must have an object; for he that conceives, must conceive something. Suppose he conceives a centaur, he may have a distinct conception of this object, though no centaur ever existed.

I am afraid, that, to those who are unacquainted with the doctrine of philosophers upon this subject, I shall appear in a very ridiculous light, for insisting upon a point so very evident, as that men may barely conceive things that never existed. They will hardly believe, that any man in his wits ever doubted of it. Indeed, I know no truth more evident to the common sense and

to the experience of mankind. But if the authority of philosophy, ancient and modern, opposes it, as I think it does, I wish not to treat that authority so fastidiously, as not to attend patiently to what may be said in support of it.

QUESTIONS FOR EXAMINATION.

Quasi definition of simple apprehension?
Characteristic properties of conception?
In what sense are our conceptions false?
Why may ideas be termed true or false, according to Locke?
Locke confounds perception and conception?
Origin of this error?
How may conception generally be illustrated?
Defect of this illustration?
The image of a thing in the mind equivalent to the act of the mind in conceiving it?
They resemble each other in three respects?
Peculiarities of the three kinds of conceptions?
Two modes of expressing individuals in language?
The three kinds of conception?
Which conceptions the most lively?
Imagination distinguished from conception?
Difference between the liveliness and the distinctness of our conceptions?
A cause of error in judgment?
Which of our conceptions most subservient to the formation of a clear judgment?
Des Cartes' definition of judgment?
How are we limited as to the ingredient parts of our conceptions?
Exception of Hume, and its refutation?
How are our most simple conceptions obtained?
The power of combination unlimited;—its use?
Distinction between men and brutes?
Essential difference of the faculty of conception?

CHAPTER II.

THEORIES CONCERNING CONCEPTION.

I. *Two prevailing prejudices gave rise to the theory of ideas.*—THE theory of ideas has been applied to the conception of objects as well as to perception and memory. Perhaps it will be irksome to the reader, as it is to the writer, to return to that subject, after so much has been said upon it; but its application to the conception of objects, which could not properly have been introduced before, gives a more comprehensive view of it, and of the prejudices which have led philosophers so unanimously into it.

There are *two prejudices* which seem to me to *have given rise to the theory of ideas* in all the various forms in which it has appeared in the course of above two thousand years; and though they have no support from the natural dictates of our faculties,

or from attentive reflection upon their operations, they are prejudices which those who speculate upon this subject, are very apt to be led into by analogy.

[The *first* is, that in all the operations of the understanding there must be some immediate intercourse between the mind and its object, so that the one may act upon the other.* The *second*, that in all the operations of understanding there must be an object of thought, *which really exists* while we think of it; or, as some philosophers have expressed it, that which is not, cannot be intelligible.†]

Had philosophers perceived that these are prejudices grounded only upon analogical reasoning, we had never heard of ideas, in the philosophical sense of that word.

The first of these principles has led philosophers to think, that as the external objects of sense are too remote to act upon the mind immediately, there must be some image or shadow of them that is present to the mind, and is the immediate object of perception. That there is such an immediate object of perception, distinct from the external object, has been very unanimously held by philosophers, though they have differed much about the name, the nature, and the origin of those immediate objects.

We have considered what has been said in the support of this principle, Essay II. chap. xiv., to which the reader is referred, to prevent repetition.

II. *An additional argument against the theory of ideas.*—[I shall only add to what is there said, that there appears no shadow of reason why the mind must have an object immediately present to it in its *intellectual operations*, any more than in its *affections and passions*. Philosophers have not said, that ideas are the immediate objects of love or resentment, of esteem or disapprobation.‡] It is, I think, acknowledged, that persons and not ideas are the immediate objects of those affections; persons, who are as far from being immediately present to the mind as other external objects, and sometimes persons who have now no existence, in this world at least, and who can neither act upon the mind, nor be acted upon by it.

III. *The second prejudice or principle contradicts the first; the falsity of one, therefore, will subvert the truth of the other.*—The second principle, which I conceive to be likewise a prejudice of philosophers grounded upon analogy, is now to be considered.

[It contradicts directly what was laid down in the last article of the preceding chapter, to wit, that we may have a distinct conception of things which never existed. This is undoubtedly the common belief of those who have not been instructed in phi-

* This refers to perception. † This relates to conception.

‡ Essay II. chap. xx. sect. 3.

losophy; and they will think it as ridiculous to defend it by reasoning, as to oppose it.]

The philosopher says, though there may be a remote object which does not exist, there must be an immediate object which really exists; for that which is not, cannot be an object of thought. The idea must be perceived by the mind, and, if it does not exist there, there can be no perception of it, no operation of the mind about it.

[This principle deserves the more to be examined, because the other before mentioned depends upon it; for although the last may be true, even if the first was false, yet if the last be not true, neither can the first. If we can conceive objects which have no existence, it follows, that there may be objects of thought which neither act upon the mind, nor are acted upon by it; because that which has no existence can neither act nor be acted upon.]

IV. *These false principles have drawn philosophers into two errors.*—[It is by these principles that philosophers have been led to think, (1) that in every act of memory and of conception as well as of perception, there are two objects. The one, the immediate object, the idea, the species, the form: the other, the mediate or external object.] The vulgar know only of one object, which in perception is something external that exists; in memory, something that did exist; and in conception, may be something that never existed. But the immediate object of the philosophers, the idea, is said to exist, and to be perceived in all these operations.

[(2) These principles have not only led philosophers *to split objects into two,* where others can find but one, but likewise have led them to reduce the three operations now mentioned to one, making memory and conception, as well as perception, to be the perception of ideas.] But nothing appears more evident to the vulgar, than that, what is only remembered, or only conceived, is not perceived; and to speak of the perceptions of memory, appears to them as absurd, as to speak of the hearing of sight.

In a word, these two principles carry us into the whole philosophical theory of ideas, and furnish every argument that ever was used for their existence. If they are true, that system must be admitted, with all its consequences: if they are only prejudices, grounded upon analogical reasoning, the whole system must fall to the ground with them.

It is, therefore, of importance to trace those principles, as far as we are able, to their origin, and to see, if possible, whether they have any just foundation in reason, or whether they are rash conclusions, drawn from a supposed analogy between matter and mind.

The unlearned, who are guided by the dictates of nature, and

express what they are conscious of concerning the operations of their own mind, believe, that the object which they distinctly perceive certainly exists; that the object which they distinctly remember certainly did exist, but now may not; but, as to things that are barely conceived, they know that they can conceive a thousand things that never existed, and that the bare conception of a thing does not so much as afford a presumption of its existence. They give themselves no trouble to know how these operations are performed, or to account for them from general principles.

[But philosophers, who wish to discover the causes of things, and to account for these operations of mind, observing, that in other operations there must be not only an agent, but something to act upon; have been led by analogy to conclude that it must be so in the operations of the mind.]

The relation between the mind and its conceptions bears a very strong and obvious analogy to the relation between a man and his work. Every scheme he forms, every discovery he makes by his reasoning powers, is very properly called the work of his mind. These works of the mind are sometimes great and important works, and draw the attention and admiration of men.

It is the province of the philosopher to consider how such works of the mind are produced, and of what materials they are composed. He calls the materials ideas. There must, therefore, be ideas, which the mind can arrange and form into a regular structure. Every thing that is produced, must be produced of something; and from nothing, nothing can be produced.

V. *Cause of Plato's error.*—Some such reasoning as this seems to me to have given the first rise to the philosophical notions of ideas. These notions were formed into a system by the Pythagoreans two thousand years ago; and this system was adopted by Plato, and embellished with all the powers of a fine and lofty imagination. I shall, in compliance with custom, call it the Platonic system of ideas, though, in reality, it was the invention of the Pythagorean school.

The most arduous question which employed the wits of men in the infancy of the Grecian philosophy was, ☞ What was the origin of the world? From what principles and causes did it proceed? To this question very different answers were given in the different schools. Most of them appear to us very ridiculous. [The Pythagoreans, however, judged very rationally, from the order and beauty of the universe, that it must be the workmanship of an eternal, intelligent and good Being: and therefore they concluded the Deity to be one first principle or cause of the universe.]

But they conceived there must be more. The universe must be made of something. ☞ Every workman must have materials

to work upon. That the world should be made out of nothing seemed to them absurd, because every thing that is made must be made of something.

> "Nullam rem e nihilo gigni divinitus unquam."*—Lucr.
> "De nihilo nihil, in nihilum nil posse reverti."†—Pers.

This maxim never was brought into doubt: even in Cicero's time it continued to be held by all philosophers. What natural philosopher (says that author in his second book of Divination) ever asserted that any thing could take its rise from nothing, or be reduced to nothing? ‡ Because men must have materials to work upon, they concluded it must be so with the Deity. This was reasoning from analogy.

[From this it followed,§ that an eternal uncreated matter was another first principle of the universe. But this matter, they believed, had no form nor quality. It was the same with the materia prima, or first matter of Aristotle, who borrowed this part of his philosophy from his predecessors.]

To us it seems more rational to think that the Deity created matter with its qualities, than that the matter of the universe should be eternal and self-existent. But so strong was the prejudice of the ancient philosophers against what we call creation, that they rather chose to have recourse to this eternal and unintelligible matter, that the Deity might have materials to work upon.

[The same analogy which led them to think that there must be an eternal matter of which the world was made, led them also to conclude‖ that there must be an eternal *pattern* or model according to which it was made.] Works of design and art must be distinctly conceived before they are made. The Deity, as an intelligent Being, about to execute a work of perfect beauty and regularity, must have had a distinct conception of his work before it was made. This appears very rational.

But this conception, being the work of the Divine intellect, something must have existed as its object. This could only be ideas, which are the proper and immediate object of intellect.

VI. *The three principles of Plato.*—[From this investigation of the principles or causes of the universe, those philosophers concluded them to be three in number, to wit, an eternal matter as the material cause, eternal ideas as the model or exemplary cause, and an eternal intelligent mind as the efficient cause.]

VII. *Attributes of these ideas.*—As to the nature of those

* "That nothing could have been produced out of nothing by the Deity."
† Nothing can come from, or return to, nothing.
‡ So also Shakespeare, "Nothing can come of nothing."—King Lear, Act I. Scene 1.
§ According to the first prejudice, p. 277.
‖ According to the second prejudice, p. 277.

eternal ideas, the philosophers of that sect ascribed to them the most magnificent attributes. [They were immutable and uncreated; the object of the Divine intellect before the world was made; and the only object of intellect and of science to all intelligent beings. As far as intellect is superior to sense, so far are ideas superior to all the objects of sense. The objects of sense being in a constant flux, cannot properly be said to exist. Ideas are the things which have a real and permanent existence. They are as various as the *species* of things, there being one idea of every species, but none of individuals. The idea is the essence of the species, and existed before any of the species was made. It is entire in every individual of the species, without being either divided or multiplied.]

In our present state, we have but an imperfect conception of the eternal ideas; but it is the highest felicity and perfection of men to be able to contemplate them. While we are in this prison of the body, sense, as a dead weight, bears us down from the contemplation of the intellectual objects; and it is only by a due purification of the soul, and abstraction from sense, that the intellectual eye is opened, and that we are enabled to mount upon the wings of intellect to the celestial world of ideas.

Such was the most ancient system concerning ideas, of which we have any account. And however different from the modern, it appears to be built upon the prejudices we have mentioned; to wit, that in every operation, there must be something to work upon; and that even in conception there must be an object which really exists.

For if those ancient philosophers had thought it possible that the Deity could operate without materials in the formation of the world, and that he could conceive the plan of it without a model, they could have seen no reason to make matter and ideas eternal and necessarily existent principles, as well as the Deity himself.

VIII. *Their arrangement perhaps not believed to be eternal.*—[Whether they believed that the ideas were not only eternal, but eternally, and without a cause, *arranged in that beautiful and perfect order*, which they ascribe to this intelligible world of ideas, I cannot say; but this seems to be a necessary consequence of the system.] [For if the Deity could not conceive the plan of the world which he made, without a model which really existed, that model could not be his work, nor contrived by his wisdom; for if he made it, he must have conceived it before it was made; it must therefore have existed in all its beauty and order independent of the Deity, and this I think they acknowledged, by making the model and the matter of this world, first principles, no less than the Deity.]

IX. *Consequences of this theory.*—If the Platonic system be thus understood, (and I do not see how it can hang together

otherwise,) it leads to two consequences that are unfavourable to it.

[*First*, Nothing is left to the Maker of this world but the skill to work after a model. The model had all the perfection and beauty that appears in the copy, and the Deity had only to copy after a pattern that existed independent of him. Indeed, the copy, if we believe those philosophers, falls very far short of the original; but this they seem to have ascribed to the refractoriness of matter, of which it was made.]

[*Secondly*, If the world of ideas, without being the work of a perfectly wise and good intelligent Being, could have so much beauty and perfection, how can we infer from the beauty and order of this world, which is but an imperfect copy of the other, that it must have been made by a perfectly wise and good Being?] The force of this reasoning, from the beauty and order of the universe, to its being the work of a wise Being, which appears invincible to every candid mind, and appeared so to those ancient philosophers, is entirely destroyed by the supposition of the existence of a world of ideas, of greater perfection and beauty, which never was made. Or, if the reasoning be good, it will apply to the world of ideas, which must of consequence have been made by a wise and good intelligent Being, and must have been conceived before it was made.

X. *The Platonic system difficult to be understood.*—It may further be observed, that all that is mysterious and unintelligible in the Platonic ideas, arises from attributing *existence* to them. Take away this one attribute, all the rest, however pompously expressed, are easily admitted and understood.]

What is a Platonic idea? It is the essence of a species. It is the exemplar, the model, according to which, all the individuals of that species are made. It is entire in every individual of the species, without being multiplied or divided. It was an object of the Divine intellect from eternity, and is an object of contemplation and of science to every intelligent being. It is eternal, immutable, and uncreated; and, to crown all, it not only exists, but has a more real and permanent existence than anything that ever God made.

Take this description altogether, and it would require an Œdipus to unriddle it. But take away the last part of it, and nothing is more easy. It is easy to find five hundred things which answer to every article in the description except the last.

☞ Take for an instance the nature of a circle, as it is defined by Euclid, an object which every intelligent being may conceive distinctly, though no circle had ever existed; it is the exemplar, the model, according to which all the individual figures of that species that ever existed were made; for they are all made according to the nature of a circle. It is entire in every individual

of the species, without being multiplied or divided. For every circle is an entire circle; and all circles, in as far as they are circles, have one and the same nature. It was an object of the Divine intellect from all eternity, and may be an object of contemplation and of science to every intelligent being. It is the essence of a species, and, like all other essences, it is eternal, immutable, and uncreated. This means no more, but that a circle always was a circle, and can never be anything but a circle. It is the necessity of the thing, and not any act of creating power, that makes a circle to be a circle.

The nature of every species, whether of substance, of quality, or of relation, and in general everything which the ancients called an universal, answers to the description of a Platonic idea, if in that description you leave out the attribute of existence.

If we believe that no species of things could be conceived by the Almighty without a model that really existed, we must go back to the Platonic system, however mysterious. But if it be true, that the Deity could have a distinct conception of things which did not exist, and that other intelligent beings may conceive objects which do not exist, the system has no better foundation than this prejudice, that the operations of mind must be like those of the body.

XI. *The Platonic system only partially rejected by the Peripatetics.*—[Aristotle rejected the ideas of his master Plato as visionary; but he retained the prejudices that gave rise to them, and therefore substituted something in their place, but under a different name, and of a different origin.]

He called the objects of intellect, intelligible species; those of the memory and imagination, phantasms, and those of the senses, sensible species. This change of the name was indeed very small; for the Greek word of Aristotle, which we translate *species* or *form*, is so near to the Greek word *idea*, both in its sound and signification, that, from their etymology, it would not be easy to give them different meanings. ☞ Both are derived from the Greek word, which signifies *to see*, and both may signify a vision or appearance to the eye. Cicero, who understood Greek well, often translates the Greek word *idea* by the Latin word *visio*. But both words being used as terms of art, one in the Platonic system, the other in the Peripatetic, the Latin writers generally borrowed the Greek word *idea* to express the Platonic notion, and translated Aristotle's word, by the words *species* or *forma;* and in this they have been followed in the modern languages.

Those forms or species were called intelligible, to distinguish them from sensible species, which Aristotle held to be the immediate objects of sense.

He thought that the sensible species come from the external

object, and defined a *sense* to be that which has the capacity to receive the form of sensible things without the matter; as wax receives the form of a seal without any of the matter of it. In like manner, he thought that the intellect receives the forms of things intelligible, and he calls it the place of forms.

I take it to have been the opinion of Aristotle, that the intelligible forms in the human intellect are derived from the sensible by abstraction, and other operations of the mind itself. As to the intelligible forms in the Divine intellect, they must have had another origin; but I do not remember that he gives any opinion about them. He certainly maintained, however, that there is no intellection without intelligible species: no memory or imagination without phantasms; no perception without sensible species. ☞ Treating of memory he proposes a difficulty, and endeavours to resolve it, how a phantasm, that is a present object in the mind, should represent a thing that is past.

Thus, I think, it appears, that the Peripatetic system of species and phantasms, as well as the Platonic system of ideas, is grounded upon this principle, that in every kind of thought there must be some object that really exists; in every operation of the mind, something to work upon. Whether this immediate object be called an idea with Plato, or a phantasm or species with Aristotle; whether it be eternal and uncreated, or produced by the impressions of external objects, is of no consequence in the present argument. In both systems it was thought impossible that the Deity could make the world without matter to work upon. In both it was thought impossible, that an intelligent being could conceive anything that did not exist, but by means of a model that really existed.

XII. *Theory of the latter Platonists.*—[The philosophers of the Alexandrian school, commonly called the latter Platonists, conceived the eternal ideas of things to be in the Divine intellect, and thereby avoided the absurdity of making them a principle distinct from and independent of the Deity; but still they held them *to exist really in the Divine mind* as the objects of conception, and as the patterns and archetypes of things that are made.]

Modern philosophers, still persuaded that of every thought there must be an immediate object that really exists, have not thought it necessary to distinguish by different names the immediate objects of intellect, of imagination, and of the senses, but have given the common name of *idea* to them all.

Whether these ideas be in the *sensorium*, or in the mind, or partly in the one, and partly in the other; whether they exist when they are not perceived, or only when they are perceived; whether they are the workmanship of the Deity or of the mind itself, or of external natural causes; with regard to these points, different authors seem to have different opinions, and the same author

sometimes to waver or be diffident: but as to their existence, there seems to be great unanimity.

So much is this opinion fixed in the minds of philosophers, that I doubt not but it will appear to most a very strange paradox, or rather a contradiction, that men should think without ideas.

That it has the appearance of a contradiction, I confess. But this appearance arises from the ambiguity of the word idea. If the idea of a thing means only the thought of it, or the operation of the mind in thinking about it, which is the most common meaning of the word, to think without ideas, is to think without thought, which is undoubtedly a contradiction.

But an idea, according to the definition given of it by philosophers, is not thought, but an object of thought, which really exists, and is perceived. Now, whether is it a contradiction to say, that a man may think of an object that does not exist?

I acknowledge that a man cannot perceive an object that does not exist; nor can he remember an object that did not exist; but there appears to me no contradiction in his conceiving an object that neither does, nor ever did exist.

Let us take an example. ☞ I conceive a centaur. This conception is an operation of the mind, of which I am conscious, and to which I can attend. The sole object of it is a centaur, an animal which I believe never existed. I can see no contradiction in this.

XIII. *Three difficulties arise in the philosophic explication of conception.*—The philosopher says, I cannot conceive a centaur without having an idea of it in my mind. I am at a loss to understand what he means. He surely does not mean that I cannot conceive it without conceiving it. This would make me no wiser. What then is this idea? Is it an animal, half horse and half man? No. Then I am certain it is not the thing I conceive. Perhaps he will say, that the idea is an image of the animal, and is the immediate object of my conception, and that the animal is the mediate or remote object.

To this I answer: [*first*, I am certain there are not two objects of this conception, but one only; which is as immediate an object of my conception as any can be.]

[*Secondly*, This one object which I conceive, is not the image of an animal, it is an animal. I know what it is to conceive an image of an animal, and what it is to conceive an animal; and I can distinguish the one of these from the other without any danger of mistake.] The thing I conceive is a body of a certain figure and colour, having life and spontaneous motion. The philosopher says that the idea is an image of the animal, but that it has neither body, nor colour, nor life, nor spontaneous motion. This I am not able to comprehend.

[*Thirdly*, I wish to know how this idea comes to be an object of my thought, when I cannot even conceive what it means; and if I did conceive it, *this would be no evidence of its existence*, any more than my conception of a centaur is of its existence.] Philosophers sometimes say that we perceive ideas, sometimes that we are conscious of them. I can have no doubt of the existence of anything which I either perceive, or of which I am conscious; but I cannot find that I either perceive ideas or am conscious of them.

Perception and consciousness are very different operations, and it is strange that philosophers have never determined by which of them ideas are discerned. This is as if a man should positively affirm that he perceived an object, but whether by his eyes, or his ears, or his touch, he could not say.

But may not a man who conceives a centaur say, that he has a distinct image of it in his mind? I think he may. And if he means by this way of speaking what the vulgar mean, who never heard of the philosophical theory of ideas, I find no fault with it. By a distinct image in the mind, the vulgar mean a distinct conception: and it is natural to call it so, on account of the analogy between an image of a thing and the conception of it. On account of this analogy, obvious to all mankind, this operation is called imagination, and an image in the mind is only a periphrasis for imagination. But to infer from this that there is really an image in the mind, *distinct from the operation of conceiving the object*, is to be misled by an analogical expression; as if, from the phrases of deliberating and balancing things in the mind, we should infer that there is really a balance existing in the mind for weighing motives and arguments.

The analogical words and phrases, used in all languages to express conception, do no doubt facilitate their being taken in a literal sense. But if we only attend carefully to what we are conscious of in this operation, we shall find no more reason to think that images do really exist in our minds, than that balances and other mechanical engines do.

We know of nothing that is in the mind but by consciousness, and we are conscious of nothing but various modes of thinking; such as understanding, willing, affection, passion, doing, suffering. If philosophers choose to give the name of an idea to any mode of thinking, of which we are conscious, I have no objection to the name; but that it introduces a foreign word into our language without necessity, and a word that is very ambiguous, and apt to mislead. But if they give that name to images in the mind, which are not thought, but only objects of thought, I can see no reason to think that there are such things in nature. If they be, their existence and their nature must be more evident than anything else, because we know nothing but by their means.

I may add, that if they be, we can know nothing besides them. For, from the existence of images, we can never, by any just reasoning, infer the existence of anything else, unless perhaps the existence of an intelligent Author of them. In this Bishop Berkeley reasoned right.

XIV. *The conception precedes the existence.*—[In every work of design, the work must be conceived before it is executed, that is, before it exists. If a model, consisting of ideas, must exist in the mind, as the object of this conception, that model is a work of design no less than the other, of which it is the model; and therefore, as a work of design, it must have been conceived before it existed. *In every work of design*, therefore, *the conception must go before the existence.*] This argument we applied before to the Platonic system of eternal and immutable ideas, and it may be applied with equal force to all the systems of ideas.

If now it should be asked, What is the idea of a circle? I answer, It is the conception of a circle. What is the immediate object of this conception? The immediate and the only object of it is a circle. But where is this circle? It is no where. If it was an individual, and had a real existence, it must have a place; but being an universal, it has no existence, and therefore no place. Is it not in the mind of him that conceives it? The conception of it is in the mind, being an act of the mind; and in common language, a thing being in the mind, is a figurative expression, signifying that the thing is conceived or remembered.

It may be asked, Whether this conception is an image or resemblance of a circle? I answer, I have already accounted for its being, in a figurative sense, called the image of a circle in the mind. If the question is meant in the literal sense, we must observe, that the word *conception* has two meanings. Properly it signifies that operation of the mind which we have been endeavouring to explain; but sometimes it is put for the object of conception, or thing conceived.

Now, if the question be understood in the last of these senses, the object of this conception is not an image or resemblance of a circle; for it is a circle, and nothing can be an image of itself.

If the question be, Whether the operation of mind in conceiving a circle be an image or resemblance of a circle? I think it is not; and that no two things can be more perfectly unlike, than a species of thought and a species of figure. Nor is it more strange that conception should have no resemblance to the object conceived, than that desire should have no resemblance to the object desired, or resentment to the object of resentment.

I can likewise conceive an individual object that really exists, such as St. Paul's church in London. I have an idea of it; that is, I conceive it. The immediate object of this conception is four hundred miles distant; and I have no reason to think that

it acts upon me, or that I act upon it; but I can think of it notwithstanding. I can think of the first year, or the last year of the Julian period.

If, after all, it should be thought, that images in the mind serve to account for this faculty of conceiving things most distant in time and place, and even things which do not exist, which otherwise would be altogether inconceivable; to this I answer, That accounts of things, grounded upon conjecture, have been the bane of true philosophy in all ages. Experience may satisfy us, that it is an hundred times more probable that they are false than that they are true.

XV. *Difficulties necessary to be removed before the philosophic theory of conception can be received.*—This account of the faculty of conception, by images in the mind, or in the brain, will deserve the regard of those who have a true taste in philosophy, when it is proved by solid arguments, [*first*, That there are images in the mind, or in the brain, of the things we conceive. *Secondly*, That there is a faculty in the mind of perceiving such images. *Thirdly*, That the perception of such images produces the conception of things *most distant*, and even of things that have no existence. And *fourthly*, That the perception of *individual* images in the mind, or in the brain, gives us the conception of *universals*, which are the attributes of many individuals.] Until this is done, the theory of images existing in the mind, or in the brain, ought to be placed in the same category with the sensible species, and materia prima of Aristotle, and the vortices of Des Cartes.

QUESTIONS FOR EXAMINATION.

Two general prejudices from which the theory of ideas has arisen?

Additional argument against this theory?

The falsehood of the second principle subverts the truth of the first?

Two egregious errors of philosophers have sprung from these principles?

The three principles of Plato?

Attributes of these ideas?

Platonic ideas existed eternally and in perfect order?

Consequences of this theory?

Whence the difficulty of understanding it?

How far did Aristotle reject his master's system?

Aristotle appears to have anticipated the difficulty as to the evidence of memory?

Opinion of the latter Platonists?

Three difficulties present themselves in the philosophic explanation of conception?

It evidently appears that conception precedes existence?

Objection to the philosophic explanation of conception by images in the brain?

CHAPTER III.

MISTAKES CONCERNING CONCEPTION.

I. *The most ancient division of the operations of the understanding defective.*—1. WRITERS on logic, after the example of Aristotle, divide the operations of the understanding into three; simple apprehension, which is another word for conception, judgment, and reasoning. They teach us that reasoning is expressed by a syllogism, judgment by a proposition, and simple apprehension by a term only, that is, by one or more words which do not make a full proposition, but only the subject or predicate of a proposition. If by this they mean, as I think they do, that a proposition, or even a syllogism, may not be simply apprehended, I believe this is a mistake.

In all judgment and in all reasoning *conception* is included. We can neither judge of a proposition, nor reason about it, unless we conceive or apprehend it. We may distinctly conceive a proposition, without judging of it at all. We may have no evidence on one side or the other; we may have no concern whether it be true or false. In these cases we commonly form no judgment about it, though we perfectly understand its meaning.

A man may discourse, or plead, or write, for other ends than to find the truth. His learning, and wit, and invention, may be employed, while his judgment is not at all, or very little. When it is not truth, but some other end he pursues, judgment would be an impediment, unless for discovering the means of attaining his end; and therefore it is laid aside, or employed solely for that purpose.

The business of an orator is said to be, to find out what is fit to persuade. This a man may do with much ingenuity, who never took the trouble to examine whether it ought to persuade or not. Let it not be thought, therefore, that a man judges of the truth of every proposition he utters, or hears uttered. In our commerce with the world, judgment is not the talent that bears the greatest price; and therefore those who are not sincere lovers of truth, lay up this talent, where it rusts and corrupts, while they carry others to market, for which there is greater demand.

II. *The division of simple apprehension improper.*—[2. The division, commonly made, by logicians, of simple apprehension, into sensation, imagination, and pure intellection, seems to me very improper in several respects.]

[*First*, Under the word sensation, they include not only what

is properly so called, but the perception of external objects by the senses. These are very different operations of the mind; and, although they are commonly conjoined by nature, ought to be carefully distinguished by philosophers.

Secondly, Neither sensation, nor the perception of external objects, is simple apprehension. Both include judgment and belief, which are excluded from simple apprehension.

Thirdly, They distinguish imagination from pure intellection by this, that in imagination the image is in the brain, in pure intellection it is in the intellect. This is to ground a distinction upon an hypothesis. We have no evidence that there are images either in the brain or in the intellect.]

I take imagination, in its most proper sense, to signify a lively conception of objects of sight. This is a talent of importance to poets and orators, and deserves a proper name, on account of its connexion with those arts. According to this strict meaning of the word, imagination is distinguished from conception as a part from the whole. We conceive the objects of the other senses, but it is not so proper to say that we imagine them. We conceive judgment, reasoning, propositions, and arguments; but it is rather improper to say that we imagine these things.

III. This *distinction between imagination and conception*, may be illustrated by an example, which Des Cartes uses to illustrate the distinction between imagination and pure intellection. ☞ We can imagine a triangle or a square so clearly as to distinguish them from every other figure. But we cannot imagine a figure of a thousand equal sides and angles, so clearly. The best eye, by looking at it, could not distinguish it from every figure of more or fewer sides. And that conception of its appearance to the eye, which we properly call imagination, cannot be more distinct than the appearance itself; yet we can conceive a figure of a thousand sides, and even can demonstrate the properties which distinguish it from all figures of more or fewer sides. It is not by the eye, but by a superior faculty, that we form the notion of a great number, such as a thousand: and a distinct notion of this number of sides not being to be got by the eye, it is not imagined but it is distinctly conceived, and easily distinguished from every other number.

IV. *Locke in error as to simple apprehension.*—[3. Simple apprehension is commonly represented as the first operation of the understanding; and judgment, as being a composition or combination of simple apprehensions.]

[This mistake has probably arisen from the taking sensation, and the perception of objects by the senses, to be nothing but simple apprehension. They are very probably the first operations of the mind, but they are not simple apprehension.]

It is generally allowed, that we cannot conceive sounds if we

have never heard, nor colours if we have never seen; and the same thing may be said of the objects of the other senses. In like manner, we must have judged or reasoned before we have the conception or simple apprehension of judgment, and of reasoning.

[Simple apprehension, therefore, though it be the simplest, is not the first operation of the understanding; and instead of saying, that the more complex operations of the mind are formed by compounding simple apprehensions, we ought rather to say, that simple apprehensions are got by analysing more complex operations.]

[A similar mistake, which is carried through the whole of Mr. Locke's Essay, may be here mentioned. It is, that our simplest ideas or conceptions are got immediately by the senses, or by consciousness, and the complex afterwards formed by compounding them. I apprehend, it is far otherwise.]

Nature presents no object to the senses, or to consciousness, that is not complex. Thus, by our senses we perceive bodies of various kinds; but every body is a complex object; it has length, breadth, and thickness; it has figure, and colour, and various other sensible qualities, which are blended together in the same subject; and I apprehend, that brute animals, who have the same senses that we have, cannot separate the different qualities belonging to the same subject, and have only a complex and confused notion of the whole: such also would be our notions of the objects of sense, if we had not superior powers of understanding, by which we can analyse the complex object, abstract every particular attribute from the rest, and form a distinct conception of it.

So that it is not by the senses immediately, but rather by the powers of analysing and abstraction, that we get the most simple and the most distinct notions even of the objects of sense. This will be more fully explained in another place.

V. [4. There remains *another mistake concerning conception*, which deserves to be noticed. It is, that our conception of things is a test of their possibility, so that, what we can distinctly conceive, we may conclude to be possible; and of what is impossible, we can have no conception.

This opinion has been held by philosophers for more than a hundred years, without contradiction or dissent, as far as I know; and if it be an error, it may be of some use to inquire into its origin, and the causes that it has been so generally received as a maxim, whose truth could not be brought into doubt.

One of the fruitless questions agitated among the scholastic philosophers in the dark ages was,—what is the criterion of truth? as if men could have any other way to distinguish truth from

error, but by the right use of that power of judging which God has given them.

VI. *The dispute about the criterion of truth terminated.*—[Des Cartes endeavoured to put an end to this controversy, by making it a fundamental principle in his system, that whatever we clearly and distinctly perceive, is true.]

[To understand this principle of Des Cartes, it must be observed, *that he gave the name of perception to every power of the human understanding;* and in explaining this very maxim, he tells us, that sense, imagination, and pure intellection, are only different modes of perceiving, and so the maxim was understood by all his followers.]

The learned Dr. Cudworth seems also to have adopted this principle: "The criterion of true knowledge," says he, "is only to be looked for in our knowledge and conceptions themselves: for the entity of all theoretical truth is nothing else but clear intelligibility, and whatever is clearly conceived is an entity and a truth; but that which is false, Divine power itself cannot make it to be clearly and distinctly understood. A falsehood can never be clearly conceived or apprehended to be true."—"Etern. and Immut. Morality," p. 172, &c.

VII. *The maxim itself has undergone a change.*—[This Cartesian maxim seems to me to have led the way to that now under consideration, which seems to have been adopted as the proper correction of the former. When the authority of Des Cartes declined, men began to see that we may clearly and distinctly conceive what is not true, but thought that our conception, though not in all cases a test of truth, might be a test of possibility.]

VIII. *Causes of this false doctrine.*—[This indeed seems to be (1) a necessary consequence of the received doctrine of ideas; it being evident, that there can be no distinct image, either in the mind or anywhere else, of that which is impossible. (2) The ambiguity of the word *conceive,* which we observed Essay I. chap. i., and the common phraseology of saying, *we cannot conceive such a thing,* when we would signify that we think it impossible, might likewise *contribute to the reception of this doctrine.*]

But whatever was the origin of this opinion, it seems to prevail universally, and to be received as a maxim.

"The bare having an idea of the proposition proves the thing not to be impossible; for of an impossible proposition there can be no idea."—Dr. Sam. Clarke.

"Of that which neither does nor can exist we can have no idea."—L. Bolingbroke.

"The measure of impossibility to us is inconceivableness, that of which we can have no idea, but that reflecting upon it, it appears to be nothing, we pronounce to be impossible."—Abernethy.

"In every idea is implied the possibility of the existence of its object, nothing being clearer than that there can be no idea of an impossibility, or conception of what cannot exist."—Dr. Price.

"Impossibile est cujus nullam notionem formare possumus; possibile e contra, cui aliqua respondet notio."*—Wolfii Ontolog.

"It is an established maxim in metaphysics, that whatever the mind conceives, includes the idea of possible existence, or, in other words, that nothing we imagine is absolutely impossible."—D. Hume.

IX. *Opinion of Wolfius and other Pneumatologists.*—It were easy to muster up many other respectable anthorities for this maxim, and I have never found one that called it in question.

If the maxim be true in the extent which the famous Wolfius has given it, in the passage above quoted, we shall have a short road to the determination of every question about the possibility or impossibility of things. We need only look into our own breast, and that, like the Urim and Thummim, will give an infallible answer. ☞ If we can conceive the thing, it is possible; if not, it is impossible. And surely every man may know whether he can conceive what is affirmed or not.

☞ Other philosophers have been satisfied with one half of the maxim of Wolfius. They say, that whatever we can conceive is possible; but they do not say, that whatever we cannot conceive is impossible.

I cannot help thinking even this to be a mistake, which philosophers have been unwarily led into, from the causes before mentioned. My reasons are these:—

[1. Whatever is said to be possible or impossible is expressed by a proposition. Now, what is it to conceive a proposition? I think it is no more than to *understand distinctly its meaning.* I know no more that can be meant by simple apprehension or conception, when applied to a proposition. The axiom, therefore, amounts to this: every proposition, of which you understand the meaning distinctly, is possible. ☞ I am persuaded, that I understand as distinctly the meaning of this proposition—*Any two sides of a triangle are together equal to the third,* as of this—*Any two sides of a triangle are together greater than the third;* yet the first of these is impossible.]

X. *It is not true that conception affords proof of possibility.*—[Perhaps it will be said, that though you understand the meaning of the impossible proposition, you cannot suppose or conceive it to be true.]

[Here we are to examine the meaning of the phrases of *supposing* and *conceiving* a proposition to be true. I can certainly

* "Impossibility is that of which we can form no notion; possibility, on the other hand, that to which some notion corresponds."

suppose it to be true, because I can draw consequences from it which I find to be impossible, as well as the proposition itself.]

[If by conceiving it to be true, be meant *giving some degree of assent to it*, however small, this I confess I cannot do. But will it be said, that every proposition to which I can give any degree of assent is possible? This contradicts experience, and therefore *the maxim cannot be true in this sense*.]

Sometimes, when we say that *we cannot conceive a thing to be true*, we mean by that expression, that *we judge it to be impossible*. In this sense, I cannot, indeed, conceive it to be true, that two sides of a triangle are equal to the third. I judge it to be impossible. If, then, we understand in this sense that maxim, that nothing we can conceive is impossible, the meaning will be, that nothing is impossible which we judge to be possible. But does it not often happen, that what one man judges to be possible, another man judges to be impossible? The maxim, therefore, is not true in this sense.

I am not able to find any other meaning of *conceiving a proposition*, or of *conceiving it to be true*, besides these I have mentioned. [I know nothing that can be meant by having the idea of a proposition, but (1) either the understanding its meaning, or (2) the judging of its truth. I can (1) understand a proposition that is false or impossible, as well as one that is true or possible; and (2) I find that men have contradictory judgments about what is possible or impossible, as well as about other things. In what sense then can it be said, that the having an idea of a proposition gives certain evidence that it is possible?]

If it be said, that the idea of a proposition is an image of it in the mind, I think indeed there cannot be a distinct image either in the mind, or elsewhere, of that which is impossible; but what is meant by the image of a proposition I am not able to comprehend, and I shall be glad to be informed.

XI. *Second argument against the reception of this philosophic opinion.*—[2. Every proposition, that is necessarily true, stands opposed to a *contradictory* proposition that is impossible; and *he that conceives one, conceives both*: thus a man who believes that two and three necessarily make five, must believe it to be impossible that two and three should not make five. He conceives both propositions when he believes one.] Every proposition carries its contradictory in its bosom, and both are conceived at the same time. ☞ "It is confessed," says Mr. Hume, "that in all cases where we dissent from any person, we conceive both sides of the question, but we can believe only one." From this it certainly follows, that when we dissent from any person about a necessary proposition, we conceive one that is impossible; yet I know no philosopher who has made so much use of the maxim, that whatever we conceive is possible, as Mr. Hume. A great part of his

peculiar tenets is built upon it; and if it is true, they must be true. But he did not perceive, that in the passage now quoted, the truth of which is evident, he contradicts it himself.

XII. *Arguments against the same maxim derived from the practice in mathematics.*—[3. Mathematicians have, in many cases, proved some things to be possible, and others to be impossible; which, without demonstration, *would not have been believed:*] ☞ yet I have never found, that any mathematician has attempted to prove a thing to be possible, because it can be conceived; or impossible, because it cannot be conceived. Why is not this maxim applied to determine whether it is possible to square the circle? a point about which very eminent mathematicians have differed. It is easy to conceive, that in the infinite series of numbers, and intermediate fractions, some one number, integral or fractional, may bear the same ratio to another, as the side of a square bears to its diagonal; yet, however conceivable this may be, it may be demonstrated to be impossible.

[4. Mathematicians often require us to conceive things that are impossible, in order to prove them to be so. This is the case in all their demonstrations, ad absurdum.] Conceive, says Euclid, a right line drawn from one point of the circumference of a circle to another, to fall without the circle; I conceive this, I reason from it, until I come to a consequence that is manifestly absurd; and from thence conclude, that the thing which I conceived is impossible.

Having said so much to show, that our power of conceiving a proposition is no criterion of its possibility or impossibility, I shall add a few observations on the extent of our knowledge of this kind.

XIII. *Knowledge of what is impossible as extensive as our knowledge of what is possible.*—1. There are many propositions which, by the faculties God has given us, we judge to be necessary, as well as true. All mathematical propositions are of this kind, and many others. The contradictories of such propositions must be impossible. [Our knowledge, therefore, of what is impossible, must at least be as extensive as our knowledge of *necessary truth.*]

[2. By our *senses*, by *memory*, by *testimony*, and by other means, we know many things to be true, which do not appear to be necessary. But whatever is true, is possible. Our knowledge, therefore, of what is possible, must at least extend as far as our knowledge of *truth.*]

3. If a man pretends to determine the possibility or impossibility of things beyond these limits, let him bring proof. I do not say that no such proof can be brought. It has been brought in many cases, particularly in mathematics. But I say, that his being able to conceive a thing, is no proof that it is possible.

Mathematics afford many instances of impossibilities in the nature of things, which no man would have believed, if they had not been strictly demonstrated. Perhaps, if we were able to reason demonstratively in other subjects, to as great extent as in mathematics, we might find many things to be impossible, which we conclude, without hesitation, to be possible.

It is possible, you say, that God might have made a universe of sensible and rational creatures, into which neither natural nor moral evil should ever enter. It may be so, for what I know: but how do you know that it is possible? that you can conceive it, I grant; but this is no proof. I cannot admit, as an argument, or even as a pressing difficulty, what is grounded on the supposition that such a thing is possible, when there is no good evidence that it is possible, and, for any thing we know, it may in the nature of things be impossible.

QUESTIONS FOR EXAMINATION.

The most ancient division of the operations of the understanding?
Simple apprehension how divided?
Errors of this partition?
Des Cartes illustrates the distinction between imagination and conception?
Locke's mistake as to simple apprehension?
Whence has it arisen?
Second error respecting the same operation?
How does Des Cartes endeavour to terminate the dispute about the criterion of truth?
How has this axiom been changed?
Two causes of this false opinion?
Opinions of Wolfe and other philosophers?
Conception is no proof of possibility?
Second argument against such an opinion?
Argument derived from mathematics?
Knowledge of possibility not more extensive than that of impossibility?

CHAPTER IV.

OF THE TRAIN OF THOUGHT IN THE MIND.

I. EVERY man is conscious of a succession of thoughts which pass in his mind while he is awake, even when they are not excited by external objects.

☞ The mind on this account may be compared to liquor in the state of fermentation. When it is not in this state, being once at rest, it remains at rest, until it is moved by some external impulse. But, in the state of fermentation, it has some cause of motion in itself, which, even when there is *no impulse from without*, suffers it not to be at rest a moment, but produces a constant motion and ebullition, while it continues to ferment.

There is surely no similitude between motion and thought; but there is an analogy, so obvious to all men, that the same words are often applied to both; and many modifications of thought have no name but such as is borrowed from the modifications of motion. Many thoughts are excited by the senses. The causes or occasions of these may be considered as external: but, when such external causes do not operate upon us, we continue to think from some internal cause. From the constitution of the mind itself there is a constant ebullition of thought, a constant intestine motion; not only of thoughts barely speculative, but of sentiments, passions and affections, which attend them.

This continued succession of thought has, by modern philosophers, been called the *imagination*. I think it was formerly called the *fancy*, or the *phantasy*. If the old name be laid aside, it were to be wished that it had got a name less ambiguous than that of imagination, a name which had two or three meanings besides.

It is often called the *train of ideas*. This may lead one to think that it is a train of bare conceptions; but this would surely be a mistake. It is made up of many other operations of mind, as well as of conceptions, or ideas.

II. *Operations of the mind exerted in the train of thought.*—[Memory, judgment, reasoning, passions, affections and purposes; in a word, every operation of the mind, *excepting those of sense*, is exerted occasionally in this train of thought, and has its share as an ingredient: so that we must take the word *idea* in a very extensive sense, if we make the train of our thoughts to be only a train of ideas.]

III. *This train twofold.*—[To pass from the name, and consider the thing, we may observe, that the trains of thought in the mind are of two kinds; they are (1) either such as flow spontaneously, like water from a fountain, without any exertion of a governing principle to arrange them; or (2) they are regulated and directed by an active effort of the mind, with some view and intention.]

Before we consider these in their order, it is proper to premise, that these two kinds, however distinct in their nature, are for the most part mixed, in persons awake and come to years of understanding.

On the one hand, we are rarely so vacant of all project and design, as to let our thoughts take their own course, without the least check or direction: or if at any time we should be in this state, some object will present itself, which is too interesting not to engage the attention, and rouse the active or contemplative powers that were at rest.

On the other hand, when a man is giving the most intense

application to any speculation, or to any scheme of conduct, when he wills to exclude every thought that is foreign to his present purpose, such thoughts will often impertinently intrude upon him, in spite of his endeavours to the contrary, and occupy, by a kind of violence, some part of the time destined to another purpose. One man may have the command of his thoughts more than another man, and the same man more at one time than at another: but I apprehend, in the best trained mind the thoughts will sometimes be restive, sometimes capricious and self-willed, when we wish to have them most under command.

IV. It has been observed very justly, that *we must not ascribe to the mind the power of calling up any thought at pleasure,* because such a call or volition supposes that thought to be already in the mind; for otherwise, how should it be the object of volition? As this must be granted on the one hand, so it is no less certain on the other, that a man has a considerable power in regulating and disposing his own thoughts. Of this every man is conscious, and I can no more doubt of it, than I can doubt whether I think at all.

We seem to treat the thoughts that present themselves to the fancy in crowds, as a great man treats those that attend his levee. They are all ambitious of his attention; he goes round the circle, bestowing a bow upon one, a smile upon another; asks a short question of a third; while a fourth is honoured with a particular conference; and the greater part have no particular mark of attention, but go as they came. It is true, he can give no mark of his attention to those who were not there, but he has a sufficient number for making a choice and distinction.

In like manner, a number of thoughts present themselves to the fancy spontaneously; but if we pay no attention to them, nor hold any conference with them, they pass with the crowd, and are immediately forgot, as if they had never appeared. But those to which we think proper to pay attention, may be stopped, examined, and arranged, for any particular purpose we have in view.

It may likewise be observed, that a train of thought, which was at first composed by application and judgment, when it has been often repeated, and becomes familiar, will present itself spontaneously. Thus when a man has composed an air in music, so as to please his own ear; after he has played, or sung it often, the notes will arrange themselves in just order; and it requires no effort to regulate their succession.

Thus we see, that the fancy is made up of trains of thinking; some of which are spontaneous, others studied and regulated; and the greater part are mixed of both kinds, and take their denomination from that which is most prevalent: and that a train of thought, which at first was studied and composed, may by

habit present itself spontaneously. Having premised these things, let us return to those trains of thought which are spontaneous, which must be first in the order of nature.

When the work of the day is over, and a man lies down to relax his body and mind, he cannot cease from thinking, though he desires it. Something occurs to his fancy; that is followed by another thing, and so his thoughts are carried on from one object to another, until sleep closes the scene.

V. *Historical trains of thought.—In this operation of the mind, it is not one faculty only that is employed;* there are many that join together in its production. Sometimes the transactions of the day are brought upon the stage, and acted over again, as it were, upon this theatre of the imagination. In this case, memory surely acts the most considerable part, since the scenes exhibited are not fictions, but realities, which we remember; yet in this case the memory does not act alone, other powers are employed, and attend upon their proper objects. The transactions remembered will be more or less interesting; and we cannot then review our own conduct, nor that of others, without passing some judgment upon it. This we approve, that we disapprove. This elevates, that humbles and depresses us. Persons that are not absolutely indifferent to us, can hardly appear, even to the imagination, without some friendly or unfriendly emotion. We judge and reason about things, as well as persons in such reveries. We remember what a man said and did; from this we pass to his designs, and to his general character, and frame some hypothesis to make the whole consistent. ☞ Such trains of thought we may call ***historical.***

VI. *Romantic trains.*—There are others which we may call *romantic*, in which the plot is formed by the creative power of fancy, without any regard to what did or will happen. In these also, the powers of judgment, taste, moral sentiment, as well as the passions and affections, come in and take a share in the execution.

In these scenes, the man himself commonly acts a very distinguished part, and seldom does anything which he cannot approve. Here the miser will be generous, the coward brave, and the knave honest. Mr. Addison, in the "Spectator," calls this play of the fancy, ***castle building.***

The young politician, who has turned his thoughts to the affairs of government, becomes in his imagination a minister of state. He examines every spring and wheel of the machine of government with the nicest eye, and the most exact judgment. He finds a proper remedy for every disorder of the commonwealth, quickens trade and manufactures by salutary laws, encourages arts and sciences, and makes the nation happy at home, and respected abroad. He feels the reward of his good adminis-

tration, in that self-approbation which attends it, and is happy in acquiring, by his wise and patriotic conduct, the blessings of the present age, and the praises of those that are to come.

VII. It is probable that, upon the stage of imagination, more great exploits have been performed in every age, than have been upon the stage of life from the beginning of the world. An innate desire of self-approbation is undoubtedly a part of the human constitution. It is a powerful spur to worthy conduct, and is intended as such by the Author of our being. A man cannot be easy or happy, unless this desire be in some measure gratified. While he conceives himself worthless and base, he can relish no enjoyment. The humiliating, mortifying sentiment must be removed, and this natural desire of self-approbation will either produce a noble effort to acquire real worth, which is its proper direction, or it will lead into some of those arts of self-deceit, which create a false opinion of worth.

A castle builder, in the fictitious scenes of his fancy, will figure, not according to his real character, but according to the highest opinion he has been able to form of himself, and perhaps far beyond that opinion. For in those imaginary conflicts the passions easily yield to reason, and a man exerts the noblest efforts of virtue and magnanimity, with the same ease, as, in his dreams, he flies through the air, or plunges to the bottom of the ocean.

The romantic scenes of fancy are most commonly the occupation of young minds, not yet so deeply engaged in life as to have their thoughts taken up by its real cares and business.

Those active powers of the mind, which are most luxuriant by constitution, or have been most cherished by education, impatient to exert themselves, hurry the thought into scenes that give them play; and the boy commences in imagination, according to the bent of his mind, a general or a statesman, a poet or an orator.

VIII. When the fair ones become castle builders, they use different materials; and while the young soldier is carried into the field of Mars, where he pierces the thickest squadrons of the enemy, despising death in all its forms, the gay and lovely nymph, whose heart has never felt the tender passion, is transported into a brilliant assembly, where she draws the attention of every eye, and makes an impression on the noblest heart.

But no sooner has Cupid's arrow found its way into her own heart, than the whole scenery of her imagination is changed. Balls and assemblies have now no charms. Woods and groves, the flowery bank, and the crystal fountain, are the scenes she frequents in imagination. She becomes an Arcadian shepherdess, feeding her flock beside that of her Strephon, and wants no more to complete her happiness.

In a few years the love-sick maid is transformed into the

solicitous mother. Her smiling offspring play around her. She views them with a parent's eye. Her imagination immediately raises them to manhood, and brings them forth upon the stage of life. One son makes a figure in the army, another shines at the bar; her daughters are happily disposed of in marriage, and bring new alliances to the family. Her children's children rise up before her, and venerate her gray hairs.

Thus, the spontaneous sallies of fancy are as various as the cares and fears, the desires and hopes, of man.

> "Quicquid agunt homines, votum, timor, ira, voluptas,
> Gaudia, discursus:"—Juvenal, Sat. I. 85, 6.

These fill up the scenes of fancy, as well as the page of the satirist. Whatever possesses the heart makes occasional excursions into the imagination, and acts such scenes upon that theatre as are agreeable to the prevailing passion. The man of traffic, who has committed a rich cargo to the inconstant ocean, follows it in his thought; and, according as his hopes or his fears prevail, he is haunted with storms, and rocks, and shipwreck; or he makes a happy and a lucrative voyage; and before his vessel has lost sight of land, he has disposed of the profit which she is to bring at her return.

IX.—The poet is carried into the Elysian fields, where he converses with the ghosts of Homer and Orpheus. The philosopher makes a tour through the planetary system, or goes down to the centre of the earth, and examines its various strata. In the devout man likewise, the great objects that possess his heart often play in his imagination; sometimes he is transported to the regions of the blessed, from whence he looks down with pity upon the folly and pageantry of human life; or he prostrates himself before the throne of the Most High with devout veneration; or he converses with celestial spirits about the natural and moral kingdom of God, which he now sees only by a faint light, but hopes hereafter to view with a steadier and brighter ray.

In persons come to maturity, there is even in these spontaneous sallies of fancy, some arrangement of thought; and I conceive that it will be readily allowed, that in those who have the greatest stock of knowledge, and the best natural parts, even the spontaneous movements of fancy will be the most regular and connected. They have an order, connexion, and unity, by which they are no less distinguished from the dreams of one asleep, or the ravings of one delirious on the one hand, than from the finished productions of art on the other.

How is this regular arrangement brought about? It has all the marks of judgment and reason, yet it seems to go before judgment, and to spring forth spontaneously.

X. *One phenomenon appears to support the theory of Leibnitz.*—[Shall we believe with Leibnitz, that the mind was originally formed like a watch wound up; and that all its thoughts, purposes, passions, and actions, are effected by the gradual evolution of the original spring of the machine, and succeed each other in order, as necessarily as the motions and pulsations of a watch?]

If a child of three or four years, were put to account for the phenomena of a watch, he would conceive that there is a little man within the watch, or some other little animal, that beats continually, and produces the motion. Whether the hypothesis of this young philosopher in turning the watch spring into a man, or that of the German philosopher in turning a man into a watch spring, be the most rational, seems hard to determine.

To account for the regularity of our thoughts, from motions of animal spirits, vibrations of nerves, attractions of ideas, or from any other unthinking cause, whether mechanical or contingent, seems equally irrational.

If we be not able to distinguish the strongest marks of thought and design from the effects of mechanism or contingency, the consequence will be very melancholy: for it must necessarily follow, that we have no evidence of thought in any of our fellow men, nay, that we have no evidence of thought or design in the structure and government of the universe. If a good period or sentence was ever produced without having had any judgment previously employed about it, why not an Iliad or Eneid? They differ only in less and more; and we should do injustice to the philosopher of Laputa, in laughing at his project of making poems by the turning of a wheel, if a concurrence of unthinking causes may produce a rational train of thought.

XI. *Origin of the regularity of the train of thoughts in certain cases.*—[It is, therefore, in itself highly probable, to say no more, that whatsoever is regular and rational in a train of thought, which presents itself spontaneously to a man's fancy, without any study, *is a copy of what had been before composed by his own rational powers, or those of some other person.*]

We certainly judge so in similar cases. Thus, in a book I find a train of thinking, which has the marks of knowledge and judgment. I ask how it was produced? It is printed in a book. This does not satisfy me, because the book has no knowledge nor reason. I am told that a printer printed it, and a compositor set the types. Neither does this satisfy me. These causes perhaps knew very little of the subject. There must be a prior cause of the composition. It was printed from a manuscript. True. But the manuscript is as ignorant as the printed book. The manuscript was written or dictated by a man of knowledge and judgment. This, and this only, will satisfy a man of common under-

standing; and it appears to him extremely ridiculous to believe that such a train of thinking could originally be produced by any cause that neither reasons nor thinks.

Whether such a train of thinking be printed in a book, or printed, so to speak, in his mind, and issue spontaneously from his fancy, it must have been composed with judgment by himself, or by some other rational being.

This, I think, will be confirmed by tracing the progress of the human fancy as far back as we are able.

We have not the means of knowing how the fancy is employed in infants. Their time is divided between the employment of their senses and sound sleep: so that there is little time left for imagination, and the materials it has to work upon are probably very scanty. A few days after they are born, sometimes a few hours, we see them smile in their sleep. But what they smile at, is not easy to guess; for they do not smile at any thing they see when awake, for some months after they are born. It is likewise common to see them move their lips in sleep, as if they were sucking.

These things seem to discover some working of the imagination: but there is no reason to think that there is any regular train of thought in the mind of infants.

By a regular train of thought, I mean that which has a beginning, a middle, and an end, an arrangement of its parts, according to some rule or with some intention. Thus, the conception of a design, and of the means of executing it; the conception of a whole, and the number and order of the parts. These are instances of the most simple trains of thought that can be called regular.

XII. *When these regular trains of thought first begin to exist.*—[Man has undoubtedly ***a power*** (whether we call it taste or judgment, is not of any consequence in the present argument) whereby he distinguishes between a composition, and a heap of materials;] between a house, for instance, and a heap of stones; between a sentence, and a heap of words; between a picture, and a heap of colours. [It does not appear to me that children have any regular trains of thought *until this power begins to operate*. Those who are born such idiots as never to show any signs of this power, show as little any signs of regularity of thought. It seems, therefore, that this power is connected with all regular trains of thought, and may be the cause of them.]

Such trains of thought discover themselves in children about two years of age. They can then give attention to the operations of older children in making their little houses, and ships, and other such things, in imitation of the works of men. They are then capable of understanding a little of language, which shows both a regular train of thinking, and some degree of abstraction.

I think we may perceive a distinction between the faculties of children of two or three years of age, and those of the most sagacious brutes. They can then perceive design and regularity in the works of others, especially of older children; their little minds are fired with the discovery; they are eager to imitate it, and never at rest till they can exhibit something of the same kind.

When a child first learns by imitation to do something that requires design, how does he exult! Pythagoras was not more happy in the discovery of his famous theorem. He seems then first to reflect upon himself, and to swell with self-esteem. His eyes sparkle. He is impatient to show his performance to all about him, and thinks himself entitled to their applause. He is applauded by all, and feels the same emotion from this applause, as a Roman consul did from a triumph. He has now a consciousness of some worth in himself. He assumes a superiority over those who are not so wise; and pays respect to those who are wiser than himself. He attempts something else, and is every day reaping new laurels.

XIII. *Ideas grow with the growth of children.*—As children grow up, they are delighted with tales, with childish games, with designs and stratagems: every thing of this kind stores the fancy with a new regular train of thought, which becomes familiar by repetition, so that one part draws the whole after it in the imagination.

The imagination of a child, like the hand of a painter, is long employed in copying the works of others, before it attempts any invention of its own.

☞ The *power of invention* is not yet brought forth, but it is coming forward, and, like the bud of a tree, is ready to burst its integuments, when some accident aids its eruption.

There is no power of the understanding that gives so much pleasure to the owner as that of invention; whether it be employed in mechanics, in science, in the conduct of life, in poetry, in wit, or in the fine arts. One who is conscious of it, acquires thereby a worth and importance in his own eye which he had not before. He looks upon himself as one who formerly lived upon the bounty and gratuity of others, but who has now acquired some property of his own. When this power begins to be felt in the young mind, it has the grace of novelty added to its other charms, and, like the youngest child of the family, is caressed beyond all the rest.

We may be sure, therefore, that as soon as children are conscious of this power, they will exercise it in such ways as are suited to their age, and to the objects they are employed about. This gives rise to innumerable new associations, and regular trains of thought, which make the deeper impression upon the mind, as they are its exclusive property.

I am aware that the power of invention is distributed among men more unequally than almost any other. When it is able to produce any thing that is interesting to mankind, we call it genius; a talent which is the lot of very few. But there is perhaps a lower kind, or lower degree of invention that is more common. However this may be, it must be allowed, that the power of invention in those who have it, will produce many new regular trains of thought; and these being expressed in works of art, in writing, or in discourse, will be copied by others.

XIV. *Twofold origin of the regular train of thought.*—[Thus I conceive the minds of children, *as soon as they have judgment to distinguish what is regular, orderly, and connected, from a mere medley of thought*, are furnished with regular trains of thinking by these means.]

[*First* and chiefly, by copying what they see in the works and in the discourse of others.] Man is the most imitative of all animals; he not only imitates with intention, and purposely, what he thinks has any grace or beauty, but even without intention, he is led by a kind of instinct, which it is difficult to resist, into the modes of speaking, thinking, and acting, which he has been accustomed to see in his early years. The more children see of what is regular and beautiful in what is presented to them, the more they are led to observe and to imitate it.

This is the chief part of their stock, and descends to them by a kind of tradition from those who came before them; and we shall find, that the fancy of most men is furnished from those they have conversed with, as well as their religion, language, and manners.

[*Secondly*, By the additions or innovations that are properly their own, these will be greater or less, in proportion to their study and invention; but in the bulk of mankind are not very considerable.]

Every profession, and every rank in life, has a manner of thinking, and turn of fancy, that is proper to it; by which it is characterised in comedies and works of humour. The bulk of men of the same nation, of the same rank, and of the same occupation, are cast as it were in the same mould. This mould itself changes gradually, but slowly, by new inventions, by intercourse with strangers, or by other accidents.

XV. [The condition of *man requires a longer infancy and youth than* that of *other animals;* for this reason, among others, that almost every station in civil society requires a multitude of regular trains of thought, to be not only acquired, *but to be made so familiar by frequent repetition*, as to present themselves spontaneously, when there is occasion for them.]

The imagination even of men of good parts never serves them readily but in things wherein it has been much exercised.

A minister of state holds a conference with a foreign ambassador with no greater emotion than a professor in a college prelects to his audience. The imagination of each presents to him what the occasion requires to be said, and how. Let them change places, and both would find themselves at a loss.

The habits which the human mind is capable of acquiring by exercise are wonderful in many instances; in none more wonderful than in that versatility of imagination which a well-bred man acquires, by being much exercised in the various scenes of life. In the morning he visits a friend in affliction. Here his imagination brings forth from its store every topic of consolation; every thing that is agreeable to the laws of friendship and sympathy, and nothing that is not so. From thence he drives to the minister's levee, where imagination readily suggests what is proper to be said or replied to every man, and in what manner, according to the degree of acquaintance or familiarity, of rank or dependence, of opposition or concurrence of interests, of confidence or distrust, that is between them. Nor does all this employment hinder him from carrying on some design with much artifice, and endeavouring to penetrate into the views of others through the closest disguises. From the levee he goes to the House of Commons, and speaks upon the affairs of the nation; from thence to a ball or assembly, and entertains the ladies. His imagination puts on the friend, the courtier, the patriot, the fine gentleman, with more ease than we put off one suit and put on another.

This is the effect of training and exercise. For a man of equal parts and knowledge, but unaccustomed to those scenes of public life, is quite disconcerted when first brought into them. His thoughts are put to flight, and he cannot rally them.

There are feats of imagination to be learned by application and practice, as wonderful as the feats of balancers and rope-dancers, and often as useless.

When a man can make a hundred verses standing on one foot, or play three or four games at chess at the same time without seeing the board, it is probable he hath spent his life in acquiring such a feat. However, such unusual phenomena show what habits of imagination may be acquired.

When such habits are acquired and perfected, they are exercised without any laborious effort; like the habit of playing upon an instrument of music. There are innumerable motions of the fingers upon the stops or keys, which must be directed in one particular train or succession. There is only one arrangement of those motions that is right, while there are ten thousand that are wrong, and would spoil the music. The musician thinks not in the least of the arrangement of those motions; he has a distinct idea of the tune, and wills to play it.

The motions of the fingers arrange themselves, so as to answer his intention.

In like manner, when a man speaks upon a subject with which he is acquainted, there is a certain arrangement of his thoughts and words necessary to make his discourse sensible, pertinent, and grammatical. In every sentence, there are more rules of grammar, logic, and rhetoric, that may be transgressed, than there are words and letters. He speaks without thinking of any of those rules, and yet observes them all, as if they were all in his eye.

This is a habit so similar to that of a player on an instrument, that I think both must be got in the same way, that is, by much practice, and the power of habit.

When a man speaks well and methodically upon a subject without study, and with perfect ease, I believe we may take it for granted that his thoughts run in a beaten track. There is a mould in his mind, which has been formed by much practice, or by study, for this very subject, or for some other so similar and analogous, that his discourse falls into this mould with ease, and takes its form from it.

XVI. *The phenomenon explained by natural causes.*—Hitherto we have considered the operations of fancy that are either spontaneous, or at least require no laborious effort to guide and direct them, and have endeavoured to account for that degree of regularity and arrangement which is found even in them. [(1) The natural powers of judgment and invention, (2) the pleasure that always attends the exercise of those powers, (3) the means we have of improving them by imitation of others, and (4) the effect of practice and habits, seem to me sufficiently to account for this phenomenon, without supposing any unaccountable attractions of ideas by which they arrange themselves.]

But we are able to direct our thoughts in a certain course so as to perform a destined task.

Every work of art has its model framed in the imagination. Here the "Iliad" of Homer, the "Republic" of Plato, the "Principia" of Newton, were fabricated. Shall we believe, that those works took the form in which they now appear of themselves? That the sentiments, the manners, and the passions arranged themselves at once in the mind of Homer, so as to form the "Iliad?" Was there no more effort in the composition, than there is in telling a well-known tale, or singing a favourite song? This cannot be believed.

Granting that some happy thought first suggested the design of singing the wrath of Achilles; yet, surely, it was a matter of judgment and choice where the narration should begin, and where it should end.

Granting that the fertility of the poet's imagination suggested

a variety of rich materials; was not judgment necessary to select what was proper, to reject what was improper, to arrange the materials into a just composition, and to adapt them to each other, and to the design of the whole?

No man can believe that Homer's ideas, merely by certain sympathies and antipathies, by certain attractions and repulsions inherent in their natures, arranged themselves according to the most perfect rules of epic poetry; and Newton's, according to the rules of mathematical composition.

I should sooner believe that the poet, after he invoked his muse, did nothing at all but listen to the song of the goddess. Poets indeed, and other artists, must make their works appear natural; but nature is the perfection of art, and there can be no just imitation of nature without art: when the building is finished, the rubbish, the scaffolds, the tools and engines, are carried out of sight; but we know it could not have been reared without them.

XVII. *The train of thinking*, therefore, is *capable of being guided* and directed, ☞ much in the same manner as the horse we ride. The horse has his strength, his agility, and his mettle in himself; he has been taught certain movements, and many useful habits that make him more subservient to our purposes, and obedient to our will: but to accomplish a journey, he must be directed by the rider.

In like manner, fancy has its original powers, which are very different in different persons; it has likewise more regular motions, to which it has been trained by a long course of discipline and exercise; and by which it may extempore, and without much effort, produce things that have a considerable degree of beauty, regularity, and design.

But the most perfect works of design are never extemporary. Our first thoughts are reviewed; we place them at a proper distance; examine every part, and take a complex view of the whole: by our critical faculties, we perceive this part to be redundant, that deficient; here is a want of nerves, there a want of delicacy; this is obscure, that too diffuse: things are marshalled anew, according to a second and more deliberate judgment; what was deficient, is supplied, what was dislocated, is put in joint; redundances are lopped off, and the whole polished.

Though poets of all artists make the highest claim to inspiration, yet if we believe Horace, a competent judge, no production in that art can have merit, which has not cost such labour as this in the birth.

"Vos O!
Pompilius sanguis, carmen reprehendite quod non
Multa dies, et multa litura coercuit, atque
Perfectum decies non castigavit ad unguem."

"Illustrious youth, with just contempt receive,
Nor let the hardy poem hope to live,
Where time and full correction don't refine
The finish'd work, and polish every line."

The conclusion I would draw from all that has been said upon this subject is, That every thing that is regular in that train of thought, which we call fancy or imagination, from the little designs and reveries of children, to the grandest productions of human genius, was originally the *offspring of judgment or taste, applied with some effort greater or less.* What one person composed with art and judgment, is imitated by another with great ease. What a man himself at first composed with pains, becomes by habit so familiar, as to offer itself spontaneously to his fancy afterwards: but nothing that is regular, was ever at first conceived, without design, attention, and care.

XVIII. *Origin of the train of thoughts, according to Hume.*—I shall now make a few reflections upon a theory which has been applied to account for this successive train of thought in the mind. It was hinted by Mr. Hobbes, but has drawn more attention since it was distinctly explained by Mr. Hume.

That author thinks that the train of thought in the mind is owing to a kind of attraction which ideas have for other ideas that bear certain relations to them. He thinks the complex ideas, which are the common subjects of our thoughts and reasoning, are owing to the same cause. [The relations which produce this attraction of ideas, he thinks, are these three only, to wit, causation, contiguity in time or place, and similitude.] He asserts, that these are the only general principles that unite ideas. And having, in another place, occasion to take notice of contrariety as a principle of connexion among ideas, in order to reconcile this to his system, he tells us gravely, ☞ that contrariety may perhaps be considered as a mixture of causation and resemblance. That ideas which have any of these three relations do mutually attract each other, so that one of them being presented to the fancy, the other is drawn along with it, this he seems to think an original property of the mind, or rather of the ideas, and therefore inexplicable.

First, I observe with regard to this theory, that although it is true that the thought of any object is apt to lead us to the thought of its cause or effect, of things contiguous to it in time or place, or of things resembling it, yet this enumeration of the relations of things which are apt to lead us from one object to another, is very inaccurate.

XIX. *These relations do not account for the phenomenon, and the division inadequate.*—[The enumeration is too large upon his own principles; but it is by far too scanty in reality. Causation, according to his philosophy, implies nothing more than a

constant conjunction observed between the cause and the effect, and therefore contiguity must include causation, and his three principles of attraction are reduced to two.]

But when we take all the three, the enumeration is in reality very incomplete. *Every relation of things has a tendency, more or less, to lead the thought, in a thinking mind, from one to the other;* and not only every relation, but every kind of contrariety and opposition. What Mr. Hume says, that contrariety may perhaps be considered as a mixture "of causation and resemblance," I can as little comprehend as if he had said that figure may perhaps be considered as a mixture of colour and sound.

Our thoughts pass easily from the end to the means; from any truth to the evidence on which it is founded, the consequences that may be drawn from it, or the use that may be made of it. From a part we are easily led to think of the whole, from a subject to its qualities, or from things related to the relation. Such transitions in thinking must have been made thousands of times by every man who thinks and reasons, and thereby become, as it were, beaten tracks for the imagination.

XX. [Not only the relations of objects to each other influence our train of thinking, but the relation they bear to the present *temper* and *disposition* of the mind; their relation to the habits we have acquired, whether moral or intellectual; to the company we have kept, and to the business in which we have been chiefly employed.] The same event will suggest very different reflections to different persons, and to the same person at different times, according as he is in good or bad humour, as he is lively or dull, angry or pleased, melancholy or cheerful.

Lord Kames, in his "Elements of Criticism," and Dr. Gerard in his "Essay on Genius," have given a much fuller and juster enumeration of the causes that influence our train of thinking, and I have nothing to add to what they have said on this subject.

Secondly, Let us consider how far this attraction of ideas must be resolved into original qualities of human nature.

I believe the original principles of the mind, of which we can give no account, but that such is our constitution, are more in number than is commonly thought. But we ought not to multiply them without necessity.

XXI. *Certain original faculties of the mind govern the trains of thinking.*—[That trains of thinking, which by frequent repetition have become familiar, should spontaneously offer themselves to our fancy, seems to require no other original quality but *the power of habit.*]

In all rational thinking, and in all rational discourse, whether serious or facetious, the thought must have some relation to what went before. Every man, therefore, from the dawn of reason, must have been accustomed to a train of related objects. These

please the understanding, and by custom become like beaten tracks which invite the traveller.

[As far as it is in our power *to give a direction* to our thoughts, which it is, undoubtedly, in a great degree, they will be directed by the active principles common to men, by our appetites, our passions, our affections, our reason, and conscience.] And that the trains of thinking in our minds are chiefly governed by these, according as one or another prevails at the time, every man will find in his experience.

If the mind is at any time vacant from every passion and desire, there are still some objects that are more acceptable to us than others. The facetious man is pleased with surprising similitudes or contrasts; the philosopher with the relations of things that are subservient to reasoning; the merchant with what tends to profit; and the politician with what may mend the state.

A good writer of comedy or romance can feign a train of thinking for any of the persons of his fable, which appears very natural, and is approved by the best judges. Now, what is it that entitles such a fiction to approbation? Is it that the author has given a nice attention to the relations of causation, contiguity, and similitude in the ideas? This, surely, is the least part of its merit. But the chief part consists in this, that it corresponds perfectly with the general character, the rank, the habits, the present situation, and passions of the person. If this be a just way of judging in criticism, it follows necessarily, that the circumstances last mentioned have the chief influence in suggesting our trains of thought.

It cannot be denied, that the state of the body has an influence upon our imagination, according as a man is sober or drunk, as he is fatigued or refreshed. Crudities and indigestion are said to give uneasy dreams, and have probably a like effect upon the waking thoughts. Opium gives to some persons pleasing dreams, and pleasing imaginations when awake, and to others such as are horrible and distressing.

XXII. *Attempt to explain that faculty in brutes which is analogous to memory in man.*—These influences of the body upon the mind can only be known by experience, and I believe we can give no account of them.

Nor can we, perhaps, give any reason why we must think without ceasing while we are awake. I believe we are likewise originally disposed, in imagination, to pass from any one object of thought to others that are contiguous to it in time or place. This I think may be observed in brutes and in idiots, as well as in children, before any habit can be acquired that might account for it. The sight of an object is apt to suggest to the imagination what has been seen or felt in conjunction with it, even when the memory of that conjunction is gone.

[Such conjunctions of things influence not only the imagination, but the belief and the passions, especially in children and in brutes; and perhaps all that we call memory in brutes, is something of this kind.]

They expect events in the same order and succession in which they happened before; and by this expectation, their actions and passions, as well as their thoughts, are regulated. A horse takes fright at the place where some object frighted him before. We are apt to conclude from this, that he remembers the former accident. But perhaps there is only an association formed in his mind between the place and the passion of fear, without any distinct remembrance.

Mr. Locke has given us a very good chapter upon the association of ideas; and by the examples he has given to illustrate this doctrine, I think it appears that very strong associations may be formed at once; not of ideas to ideas only, but of ideas to passions and emotions; and that strong associations are never formed at once, but when accompanied by some strong passion or emotion. I believe this must be resolved into the constitution of our nature.

Mr. Hume's opinion, that the complex ideas, which are the common objects of discourse and reasoning, are formed by those original attractions of ideas, to which he ascribes the train of thoughts in the mind, will come under consideration in another place.

To put an end to our remarks upon this theory of Mr. Hume, I think he has real merit in bringing this curious subject under the view of philosophers, and carrying it a certain length. [But I see nothing in this theory that should hinder us to conclude, that every thing in the trains of our thought, which bears the marks of judgment and reason, has been the product of judgment and reason previously exercised, either by the person himself at that or some former time, or by some other person.] The attraction of ideas will be the same in a man's second thoughts upon any subject as in his first. Or if some change in his circumstances, or in the objects about him, should make any change in the attractions of his ideas, it is an equal chance whether the second be better than the first, or whether they be worse. But it is certain, that every man of judgment and taste will, upon a review, correct that train of thought which first presented itself. [If the attractions of ideas are the sole causes of the regular arrangement of thought in the fancy, there is no use for judgment or taste in any composition, nor indeed any room for their operation.]

XXIII. There are other reflections of a more practical nature, and of higher importance, to which this subject leads.

I believe it will be allowed by every man, that our happiness or misery in life, that our improvement in any art or science

which we profess; and that our improvement in real virtue and goodness, depend in a very great degree on the train of thinking that occupies the mind both in our vacant and in our more serious hours. As far, therefore, as the direction of our thoughts is in our power, (and that it is so in a great measure cannot be doubted,) it is of the last importance to give them that direction which is most subservient to those valuable purposes.

What enjoyment can he have worthy of a man, whose imagination is occupied only about things low and base, and grovels in a narrow field of mean unanimating and uninteresting objects, insensible to those finer and more delicate sentiments, and blind to those more enlarged and nobler views which elevate the soul, and make it conscious of its dignity.

How different from him, whose imagination, like an eagle in her flight, takes a wide prospect, and observes whatever it presents, that is new or beautiful, grand or important; whose rapid wing varies the scene every moment, carrying him sometimes through the fairy regions of wit and fancy, sometimes through the more regular and sober walks of science and philosophy.

The various objects which he surveys, according to their different degrees of beauty and dignity, raise in him the lively and agreeable emotions of taste. Illustrious human characters, as they pass in review, clothed with their moral qualities, touch his heart still more deeply. They not only awaken the sense of beauty, but excite the sentiment of approbation, and kindle the glow of virtue.

While he views what is truly great and glorious in human conduct, his soul catches the divine flame, and burns with desire to emulate what it admires.

The human imagination is an ample theatre, upon which every thing in human life, good or bad, great or mean, laudable or base, is acted.

In children, and in some frivolous minds, it is a mere toy-shop. And in some, who exercise their memory without their judgment, its furniture is made up of old scraps of knowledge, that are thread-bare and worn out.

In some, this theatre is often occupied by ghastly superstition, with all her train of *Gorgons, and Hydras, and Chimeras dire.* Sometimes it is haunted with all the infernal demons, and made the forge of plots, and rapine, and murder. Here every thing that is black and detestable is first contrived, and a thousand wicked designs conceived that are never executed. Here, too, the Furies act their part, taking a severe, though secret, vengeance upon the self-condemned criminal.

How happy is that mind, in which the light of real knowledge dispels the phantoms of superstition: in which the belief and reverence of a perfect all-governing Mind casts out all fear but

the fear of acting wrong: in which serenity and cheerfulness, innocence, humanity, and candour, guard the imagination against the entrance of every unhallowed intruder, and invite more amiable and worthier guests to dwell?

There shall the Muses, the Graces, and the Virtues, fix their abode; for every thing that is great and worthy in human conduct must have been conceived in the imagination before it was brought into act. And many great and good designs have been formed there, which, for want of power and opportunity, have proved abortive.

The man whose imagination is occupied by these guests must be wise; he must be good; and he must be happy.

QUESTIONS FOR EXAMINATION.

What operations of the mind are exerted in the train of thought?
This train twofold?
What phenomena appear to favour the hypothesis of Leibnitz?
Whence the regularity of the train of thought in certain instances?
When does the train of thought first assume the character of regularity?
Origin of a regular train of thought twofold?
Why does man require a more lengthened infancy and youth than other animals?
Hume's explanation of the train of thought?
Defect of his enumeration?
Which original faculties required in these trains of thought?
How does Reid explain the memory of brutes?

ESSAY V.

OF ABSTRACTION.

CHAPTER I.

OF GENERAL WORDS.

I. *Distinction between words and terms.*—THE words we use in language are either general words or proper names. Proper names are intended to signify one individual only. Such are the names of men, kingdoms, provinces, cities, rivers, and of every other creature of God, or work of man, which we choose to distinguish from all others of the kind, by a name appropriated to it. All the other words of language are general words, not appropriated to signify any one individual thing, but equally related to many.

[Under general words, therefore, I comprehend not only those which logicians call general terms, that is, such general words as may make *the subject or the predicate of a proposition*, but likewise their auxiliaries or accessories, as the learned Mr. Harris calls them; such as *prepositions, conjunctions, articles*, which are all general *words*, though they cannot properly be called general *terms*.]

II. *Grammatical distinction.*—In every language, rude or polished, general words make the greatest part, and proper names the least. Grammarians have reduced all words to eight or nine classes, which are called parts of speech. Of these there is only one, to wit, that of *nouns*, wherein proper names are found. All *pronouns, verbs, participles, adverbs, articles, prepositions, conjunctions*, and *interjections*, are general words. Of *nouns*, all *adjectives* are general words, and the greater part of *substantives*. *Every substantive that has a plural number* is a general word; for no proper name can have a plural number, because it signifies only one individual. In all the fifteen books of Euclid's "Elements," there is not one word that is not general; and the same may be said of many large volumes.

At the same time it must be acknowledged, that all the objects we perceive are individuals. Every object of sense, of memory, or of consciousness, is an individual object. All the good things

we enjoy or desire, and all the evils we feel or fear, must come from individuals; and I think we may venture to say, that every creature which God has made, in the heavens above, or in the earth beneath, or in the waters under the earth, is an individual.

III. *That general words constitute the greatest part of every language need not excite our surprise.*—How comes it to pass then, that in all languages general words make the greatest part of the language, and proper names but a very small and inconsiderable part of it?

This seemingly strange phenomenon may, I think, be easily accounted for by the following observations:

[*First*, though there be a few individuals that are obvious to the notice *of all men*, and therefore have proper names *in all languages;* such as the sun and moon, the earth and sea; yet the greatest part of the things to which we think fit to give proper names are *local;* known perhaps to a village or to a neighbourhood, but unknown to the greater part of those who speak the same language, and to all the rest of mankind. The names of such things being confined to a corner, and having no names answering to them in other languages, *are not accounted a part of the language*, ☞ any more than the customs of a particular hamlet are accounted part of the law of the nation.]

For this reason, there are but few proper names that belong to a language. It is next to be considered why there must be many general words in every language.

[*Secondly*, it may be observed, that every individual object that falls within our view has various attributes; and it is by them that it becomes useful or hurtful to us. We know not the essence of any individual object: all the knowledge we can attain of it, is the knowledge of its attributes;] its quantity, its various qualities, its various relations to other things, its place, its situation, and motions. It is by such attributes of things only that we can communicate our knowledge of them to others. By their attributes, our hopes or fears from them are regulated; and it is only by attention to their attributes that we can make them subservient to our ends; and therefore we give names to such attributes.

IV. *Attributes denominated universals, and also predicables.*—[Now all attributes must from their nature be expressed by general words, and are so expressed in all languages. In the ancient philosophy, attributes in general were called by two names which express their nature. They were called *universals*, because they might belong equally to many individuals, and are not confined to one. They were also called *predicables*, because whatever is predicated, that is, affirmed or denied of one subject, may be, of more, *and therefore is an universal, and expressed by a general word.*] A predicable, therefore, signifies the same

thing as an attribute, with this difference only, that the first is Latin, the last English. The attributes we find either in the creatures of God, or in the works of men, are common to many individuals. We either *find* it to be so, or *presume* it may be so, ☞ and give them the same name in every subject to which they belong.]

V. *Of secondary attributes.*—[There are not only attributes belonging to individual subjects, but there are likewise attributes of attributes, which may be called *secondary attributes.*] Most attributes are capable of different degrees, and different modifications, which must be expressed by general words.

Thus it is an attribute of many bodies to be moved; but motion may be in an endless variety of directions. It may be quick or slow, rectilineal or curvilineal; it may be equable, or accelerated, or retarded.

As all attributes, therefore, whether primary or secondary, are expressed by general words, it follows, ☞ that in every proposition we express in language, what is affirmed or denied of the subject of the proposition must be expressed by general words: and that the *subject* of the proposition may often be a general word, will appear from the next observation.

[*Thirdly,* The same faculties by which we distinguish the *different attributes* belonging to the *same subject,* and give names to them, enable us likewise to observe, that *many subjects agree in certain attributes,* while they differ in others. By this means we are enabled to reduce individuals which are infinite, to a limited number of classes, which are called kinds and sorts; and in the scholastic language, *genera* and *species.*]

VI. *Of genera and species.*—Observing many individuals to agree in certain attributes, we refer them all to one class, and give a name to the class: this name comprehends in its signification not one attribute only, but all the attributes which distinguish that class; and by affirming this name of any individual, we affirm it to have all the attributes which characterize the class: thus men, dogs, horses, elephants, are so many different classes of animals. In like manner we marshal other substances, vegetable and inanimate, into classes.

Nor is it only substances that we thus form into classes. We do the same with regard to qualities, relations, actions, affections, passions, and all other things.

When a class is very large, it is divided into subordinate classes in the same manner. The higher class is called a *genus* or kind; the lower a *species* or sort of the higher: sometimes a species is still subdivided into subordinate species; and this subdivision is carried on as far as is found convenient for the purpose of language, or for the improvement of knowledge.

In this distribution of things into *genera* and *species,* it is evi-

dent that the name of the species comprehends more attributes than the name of the genus. The species comprehends all that is in the genus, and those attributes likewise which distinguish that species from others belonging to the same genus; and the more subdivisions we make, the names of the lower become still the more comprehensive in their signification, but the less extensive in their application to individuals.

Hence it is an axiom in logic, that the more extensive any general term is, it is the less comprehensive; and on the contrary, the more comprehensive, the less extensive: thus, in the following series of subordinate general terms, animal, man, Frenchman, Parisian, every subsequent term comprehends in its signification all that is in the preceding, and something more; and every antecedent term extends to more individuals than the subsequent.

VII. *They are not mere artificial inventions.*—[Such divisions and subdivisions of things into *genera* and *species* with general names, are not confined to the learned and polished languages; *they are found in those of the rudest tribes of mankind:* from which we learn, that the invention and the use of general words, both to signify the attributes of things, and to signify the *genera* and *species* of things, is not a subtile invention of philosophers, but an operation which all men perform by the light of common sense.] Philosophers may speculate about this operation, and reduce it to canons and aphorisms; but men of common understanding, without knowing any thing of the philosophy of it, can put it in practice; in like manner as they can see objects, and make good use of their eyes, although they know nothing of the structure of the eye, or of the theory of vision.

Every genus, and every species of things, may be either the subject or the predicate of a proposition, nay of innumerable propositions; for every attribute common to the genus or species may be affirmed of it; and the genus may be affirmed of every species, and both genus and species of every individual to which it extends.

Thus of man it may be affirmed, that he is an animal made up of body and mind; that he is of few days, and full of trouble; that he is capable of various improvements in arts, in knowledge, and in virtue. In a word, every thing common to the species may be affirmed of man; and of all such propositions, which are innumerable, man is the subject.

Again, of every nation and tribe, and of every individual of the human race that is, or was, or shall be, it may be affirmed that they are men. In all such propositions, which are innumerable, man is the predicate of the proposition.

VIII. *Origin of the extension and comprehension of propositions.*—We observed above an extension and a comprehension in

general terms; and that in any subdivision of things the name of the lowest species is most comprehensive, and that of the highest genus most extensive. [I would now observe, that, by means of such general terms, *there is also an extension and comprehension of propositions*, which is one of the noblest powers of language, and fits it for expressing, with great ease and expedition, the highest attainments in knowledge, of which the human understanding is capable.]

☞ When the predicate is a *genus* or a *species*, the proposition is more or less *comprehensive*, according as the *predicate* is. Thus, when I say that this seal is gold, by this single proposition, I affirm of it all the properties which that metal is known to have. When I say of any man that he is a mathematician, this appellation comprehends all the attributes that belong to him as an animal, as a man, and as one who has studied mathematics. When I say that the orbit of the planet Mercury is an ellipsis, I thereby affirm of that orbit all the properties which Apollonius and other geometricians have discovered, or may discover, of that species of figure.

Again, when the subject of a proposition is a *genus* or a *species*, the proposition is more or less *extensive*, according as the *subject* is. Thus when I am taught, that the three angles of a plane triangle are equal to two right angles, this property extends to every species of plane triangle, and to every individual plane triangle that did, or does, or can exist.

It is by means of such extensive and comprehensive propositions that human knowledge is condensed, as it were, into a size adapted to the capacity of the human mind, with great addition to its beauty, and without any diminution of its distinctness and perspicuity.

IX. [*General propositions* in science *may be compared to the seed of a plant*, which, according to some philosophers, has not only the whole future plant inclosed within it, but the seeds of that plant, and the plants that shall spring from them through all future generations.

But the similitude falls short in this respect, that time and accidents, not in our power, must concur to disclose the contents of the seed, and bring them into our view; whereas the contents of a general proposition may be brought forth, ripened, and exposed to view at our pleasure, and in an instant.]

Thus the wisdom of ages, and the most sublime theorems of science, may be laid up, like an Iliad in a nut-shell, and transmitted to future generations. And this noble purpose of language can only be accomplished, by means of general words annexed to the divisions and subdivisions of things.

What has been said in this chapter, I think, is sufficient to show, that there can be no language, not so much as a single

proposition, without general words; that they must make the greatest part of every language, and that it is by them only that language is fitted to express, with wonderful ease and expedition, all the treasures of human wisdom and knowledge.

QUESTIONS FOR EXAMINATION.

Distinction between words and terms?
Not extraordinary that general words constitute the greater part of every language?
Attributes had two denominations?
And were of two classes?
Genera and species not the inventions of philosophers?
On what do the comprehension and extension of propositions depend?
Resemblance and discrepancy between general propositions and the seeds of plants?

CHAPTER II.

OF GENERAL CONCEPTIONS.

I. As general words are so necessary in language, it is natural to conclude that there must be *general conceptions*, of which they are the signs.

Words are empty sounds when they do not signify the thoughts of the speaker; and it is only from their signification that they are denominated general. Every word that is spoken, considered merely as a sound, is an individual sound. And it can only be called a general word, because that which it signifies is general. Now, that which it signifies, is conceived by the mind both of the speaker and hearer, if the word have a distinct meaning, and be distinctly understood. It is therefore impossible that words can have a general signification, unless there be conceptions in the mind of the speaker, and of the hearer, of things that are general. It is to such that I give the name of general conceptions: and it ought to be observed, that they take this denomination, not from the act of the mind in conceiving, which is an individual act, but from the object or thing conceived, which is general.

II. *General conceptions are of two kinds.*—We are therefore here to consider (1) whether we have such general conceptions, and (2) how they are formed.

To begin with the conceptions expressed by general terms, that is, by such general words as may be the subject or the predicate of a proposition. [They are (1) either attributes of things, or (2) they are *genera* or *species* of things.]

It is evident, with respect to all the individuals we are acquainted with, that we have a more clear and distinct conception of their attributes, than of the subject to which those attributes belong.

Take, for instance, any individual body we have access to know, what conception do we form of it? Every man may know this from his consciousness. He will find that he conceives it as a thing that has length, breadth, and thickness, such a figure, and such a colour; that it is hard, or soft, or fluid; that it has such qualities, and is fit for such purposes. If it is a vegetable, he may know where it grew, what is the form of its leaves, and flower, and seed. If an animal, what are its natural instincts, its manner of life, and of rearing its young: of these attributes belonging to this individual, and numberless others, he may surely have a distinct conception; and he will find words in language by which he can clearly and distinctly express each of them.

If we consider, in like manner, the conception we form of any individual person of our acquaintance, we shall find it to be made up of various attributes, which we ascribe to him; such as, that he is the son of such a man, the brother of such another, that he has such an employment or office, has such a fortune, that he is tall or short, well or ill made, comely or ill favoured, young or old, married or unmarried; to this we may add, his temper, his character, his abilities, and perhaps some anecdotes of his history.

Such is the conception we form of individual persons of our acquaintance. By such attributes we describe them to those who know them not; and by such attributes historians give us a conception of the personages of former times. Nor is it possible to do it in any other way.

All the distinct knowledge we have or can attain of any individual, is the knowledge of its attributes: for we know not the essence of any individual. This seems to be beyond the reach of the human faculties.

Now, every attribute is what the ancients called an universal. It is, or may be, common to various individuals. There is no attribute belonging to any creature of God which may not belong to others; and, on this account, attributes, in all languages, are expressed by general words.

It appears likewise, from every man's experience, that he may have as clear and distinct a conception of such attributes as we have named, and of innumerable others, as he can have of any individual to which they belong.

Indeed, the attributes of individuals, is all that we distinctly conceive about them. It is true, we conceive a subject to which the attributes belong; but of this subject, when its attributes are set aside, we have but an obscure and relative conception, whether it be body or mind.

This was before observed with regard to bodies, Essay II. chap. xix., to which we refer, and it is no less evident with regard to minds. What is it we call a mind? It is a thinking, intelli-

gent, active being. Granting that thinking, intelligence, and activity, are attributes of mind, I want to know what the thing or being is to which these attributes belong? To this question I can find no satisfying answer. The attributes of mind, and particularly its operations, we know clearly; but of the thing itself we have only an obscure notion.

III. Nature teaches us, that thinking and reasoning are attributes, which cannot exist without a subject; but of that subject I believe the best notion we can form implies little more than that it is the subject of such attributes.

Whether other created beings may have the knowledge of the real essence of created things, so as to be able to deduce their attributes from their essence and constitution, or whether this be the prerogative of Him who made them, we cannot tell; but it is a knowledge which seems to be quite beyond the reach of the human faculties.

We know the essence of a triangle, and from that essence can deduce its properties. It is an universal, and might have been conceived by the human mind, though no individual triangle had ever existed. It has only what Mr. Locke calls a nominal essence, which is expressed in its definition. But every thing that exists has a real essence, which is above our comprehension; and therefore we cannot deduce its properties or attributes from its nature, as we do in the triangle. We must take a contrary road in the knowledge of God's works, and satisfy ourselves with their attributes as facts, and with the general conviction that there is a subject to which those attributes belong.

IV. *The conception of attributes being granted, that of genera and species follows.*—Enough, I think, has been said, to show, not only that we may have clear and distinct conceptions of attributes, but that they are the only things, with regard to individuals, of which we have a clear and distinct conception.

The other class of general terms are those that signify the *genera* and *species* into which we divide and subdivide things. [And if we be able to form distinct conceptions of attributes, it cannot surely be denied that we may have distinct conceptions of *genera* and *species; because they are only collections of attributes* which we conceive to exist in a subject, and to which we give a general name.] If the attributes comprehended under that general name be distinctly conceived, the thing meant by the name must be distinctly conceived. And the name may justly be attributed to every individual which has those attributes.

Thus, I conceive distinctly what it is to have wings, to be covered with feathers, to lay eggs. Suppose then that we give the name of *bird* to every animal that has these three attributes. Here undoubtedly my conception of a bird is as distinct as my notion of the attributes which are common to this species: and

if this be admitted to be the definition of a bird, there is nothing I conceive more distinctly. If I had never seen a bird, and can but be made to understand the definition, I can easily apply it to every individual of the species, without danger of mistake.

When things are divided and subdivided by men of science, and names given to the *genera* and *species*, those names are defined. Thus, the genera and species of plants, and of other natural bodies, are accurately defined by the writers in the various branches of natural history; so that, to all future generations, the definition will convey a distinct notion of the genus or species defined.

V. *Cause of the vague meanings of general terms.*—[There are, without doubt, many words signifying genera and species of things, which have a meaning somewhat vague and indistinct; so that those who speak the same language do not always use them in the same sense. But if we attend to the cause of this indistinctness, we shall find, that it is not owing to their being general terms, but to this, *that there is no definition of them that has authority.*] Their meaning, therefore, has not been learned by a definition, *but by a kind of induction*, by observing to what individuals they are applied by those who understand the language. We learn by habit to use them as we see others do, even when we have not a precise meaning annexed to them. A man may know, that to certain individuals they may be applied with propriety; but whether they can be applied to certain other individuals, he may be uncertain, either from want of good authorities, or from having contrary authorities, which leave him in doubt.

Thus, a man may know, that when he applies the name of beast to a lion or a tiger, and the name of bird to an eagle or a turkey, he speaks properly. But whether a bat be a bird or a beast, he may be uncertain. If there was any accurate definition of a beast and of a bird, that was of sufficient authority, he could be at no loss.

VI. *Unnecessary to define the term "man."*—It is said to have been sometimes a matter of dispute, with regard to a monstrous birth of a woman, whether it was a man or not. Although this be in reality a question about the meaning of a word, it may be of importance, on account of the privileges which laws have annexed to the human character. [To make such laws perfectly precise, the definition of a man would be necessary, which I believe legislators have seldom or never thought fit to give. It is, indeed, very difficult to fix a definition of so common a word, and the cases wherein it would be of any use so rarely occur, that perhaps it may be better, when they do occur, to leave them to the determination of a judge or of a jury, than to give a definition, *which might be attended with unforeseen consequences.*]

A genus or species, being a collection of attributes, conceived to exist in one subject, a definition is the only way to prevent any addition or diminution of its ingredients in the conception of different persons; and when there is no definition that can be appealed to as a standard, the name will hardly retain the most perfect precision in its signification.

From what has been said, I conceive it is evident, that the words which signify genera and species of things have often as precise and definite a signification as any words whatsoever; and that when it is otherwise, their want of precision is not owing to their being general words, but to other causes.

Having shown that we may have a perfectly clear and distinct conception of the meaning of general terms, we may, I think, take it for granted, that the same may be said of other general words, such as prepositions, conjunctions, articles. My design at present being only to show, that we have general conceptions no less clear and distinct than those of individuals, it is sufficient for this purpose, if this appears with regard to the conceptions expressed by general terms. To conceive the meaning of a general word, and to conceive that which it signifies, is the same thing. We conceive distinctly the meaning of general terms, therefore we conceive distinctly that which they signify. But such terms do not signify any individual, but what is common to many individuals; therefore we have a distinct conception of things common to many individuals, that is, we have distinct general conceptions.

We must here beware of the ambiguity of the word *conception*, which sometimes signifies the act of the mind in conceiving, sometimes the thing conceived, which is the object of that act. If the word be taken in the first sense, I acknowledge that every act of the mind is an individual act; the universality, therefore, is not in the act of the mind, but in the object, or thing conceived. The thing conceived is an attribute common to many subjects, or it is a genus or species common to many individuals.

Suppose I conceive a triangle, that is, a plain figure terminated by three right lines. He that understands this definition distinctly has a distinct conception of a triangle. But a triangle is not an individual; it is a species. The act of my understanding in conceiving it is an individual act, and has a real existence: but the thing conceived is general, and cannot exist without other attributes, which are not included in the definition.

Every triangle that really exists must have a certain length of sides and measure of angles; it must have place and time. But the definition of a triangle includes neither existence, nor any of those attributes; and therefore they are not included in the conception of a triangle, which cannot be accurate if it comprehend more than the definition.

Thus I think it appears to be evident, that we have general conceptions that are clear and distinct, both of attributes of things, and of genera and species of things.

QUESTIONS FOR EXAMINATION.

General conceptions of two kinds?
Signification of general terms why doubtful?
The definition of the term "man" never attempted by legislators?
Syllogism introduced to prove that we have general conceptions?
What ambiguity is here especially to be avoided?

CHAPTER III.

OF GENERAL CONCEPTIONS FORMED BY ANALYSING OBJECTS.

I. We are next to consider *the operations of the understanding, by which we are enabled to form general conceptions.*

[These appear to me to be three; *first*, The resolving or analysing a subject into its known attributes, and giving a name to each attribute, which name shall signify that attribute, and nothing more.

Secondly, The observing one or more such attributes to be common to many subjects. The first is by philosophers called *abstraction;* the second may be called *generalizing;* but both are commonly included under the name of *abstraction.*]

II. *Abstraction or generalizing, which prior.*—[It is difficult to say which of them goes first, or whether they are not so closely connected that neither can claim the precedence. For on the one hand, to perceive an agreement between two or more objects in the same attribute, seems to require nothing more than to compare them together. A savage, upon seeing snow and chalk, would find no difficulty in perceiving that they have the same colour. Yet, on the other hand, it seems impossible that he should observe this agreement without abstraction, that is, distinguishing in his conception the *colour, wherein those two objects agree, from the other qualities wherein they disagree.*]

III. *They are mutually subservient.*—[It seems therefore, that we cannot generalize without some degree of abstraction; but I apprehend we may abstract without generalizing: for what hinders me from attending to the whiteness of the paper before me, without applying that colour to any other object?] The whiteness of this individual object is an abstract conception, but not a general one, while applied to one individual only. [These two operations, however, are subservient to each other; for *the more attributes we observe* and distinguish *in any one individual, the*

more agreements we shall discover between it and other individuals.]

IV. *Formation of abstract notions of genera and species.*—[A *third* operation of the understanding, by which we form abstract conceptions, is the combining into one whole a certain number of those attributes of which we have formed abstract notions, and giving a name to that combination.] It is thus we form abstract notions of the *genera and species of things.* These three operations we shall consider in order.

V. *Of abstraction.*—With regard to abstraction, strictly so called, I can perceive nothing in it that is difficult either to be understood or practised. What can be more easy than to distinguish the different attributes which we know to belong to a subject? In a man, for instance, to distinguish his size, his complexion, his age, his fortune, his birth, his profession, and twenty other things that belong to him. To think and speak of these things with understanding, is surely within the reach of every man endowed with the human faculties.

There may be distinctions that require nice discernment, or an acquaintance with the subject that is not common. Thus, a critic in painting may discern the style of Raphael or Titian, when another man could not. A lawyer may be acquainted with many distinctions in crimes, and contracts, and actions, which never occurred to a man who has not studied law. One man may excel another in the talent of distinguishing, as he may in memory or in reasoning; but there is a certain degree of this talent, without which a man would have no title to be considered as a reasonable creature.

VI. [It ought likewise to be observed, that *attributes may* with perfect ease *be distinguished* and disjoined *in our conception, which cannot be actually separated in the subject.*] Thus, in a body, I can distinguish its solidity from its extension, and its weight from both. In extension, I can distinguish length, breadth, and thickness, yet none of these can be separated from the body, or from one another. There may be attributes belonging to a subject, and inseparable from it, of which we have no knowledge, and consequently no conception; but this does not hinder our conceiving distinctly those of its attributes which we know.

[Thus, all the properties of a circle are inseparable from the nature of a circle, and may be demonstrated from its definition; yet a man may have a perfectly distinct notion of a circle, who knows very few of those properties of it which mathematicians have demonstrated; and a circle probably has many properties which no mathematician ever dreamed of.]

[It is therefore certain, that attributes, which in their nature are absolutely inseparable from their subject, and from one

another, may be disjoined in our conception; one cannot exist without the other, but one can be conceived without the other.]

VII. *Of generalizing.*—Having considered abstraction, strictly so called, let us next consider the operation of generalizing, which is nothing but the observing one or more attributes to be common to many subjects.

If any man can doubt whether there be attributes that are really common to many individuals, let him consider whether there be not many men that are above six feet high, and many below it; whether there be not many men that are rich, and many more that are poor; whether there be not many that were born in Britain, and many that were born in France. To multiply instances of this kind, would be to affront the reader's understanding. It is certain, therefore, that there are innumerable attributes that are really common to many individuals; and if this be what the schoolmen called "universale a parte rei," we may affirm with certainty, that there are such universals.

VIII. *Objection to generalizing.*—[There are some attributes expressed by general words, of which this may seem more doubtful. *Such are the qualities which are inherent in their several subjects.*] It may be said that ☞ every subject hath its own qualities, and that which is the quality of one subject cannot be the quality of another subject. Thus the whiteness of the sheet of paper upon which I write, cannot be the whiteness of another sheet, though both are called white. The weight of one guinea is not the weight of another guinea, though both are said to have the same weight.

IX. *Answered; and the distinction of abstract and general conceptions stated.*—[To this I answer, that the whiteness *of this sheet* is one thing, *whiteness* is another; the conceptions signified by these two forms of speech are as different as the expressions: the first signifies an individual quality *really existing*, and is not a general conception, though it be an *abstract* one: the second signifies a *general* conception, *which implies no existence*, but may be predicated of every thing that is white, and in the same sense.] On this account, if one should say, that the whiteness of this sheet is the whiteness of another sheet, every man perceives this to be absurd; but when he says both sheets are white, this is true and perfectly understood. The conception of whiteness implies no existence; it would remain the same, though every thing in the universe that is white were annihilated.

It appears, therefore, that the general names of qualities, as well as of other attributes, are applicable to many individuals in the same sense, which cannot be if there be not general conceptions signified by such names.

If it should be asked, how early, or at what period of life, men begin to form general conceptions? I answer,—as soon as a

child can say, with understanding, that he has two brothers or two sisters; as soon as he can use the plural number, he must have general conceptions; for no individual can have a plural number.

X. *Fruitful source of general conceptions.*—As there are not two individuals in nature that agree in every thing, so there are very few that do not agree in some things. We take pleasure from very early years in observing such agreements. [One great branch of what we call *wit*, which, when innocent, gives pleasure to every good-natured man, consists in discovering unexpected agreements in things.] The author of "Hudibras" could discern a property common to the morning and a boiled lobster, that both turn from black to red. Swift could see something common to wit and an old cheese. Such unexpected agreements may show wit: but there are innumerable agreements of things which cannot escape the notice of the lowest understanding; such as agreements in colour, magnitude, figure, features, time, place, age, and so forth. These agreements are the foundation of so many common attributes, which are found in the rudest languages.

The ancient philosophers called these universals or predicables, and endeavoured to reduce them to five classes; to wit, genus, species, specific difference, properties, and accidents. Perhaps there may be more classes of universals or attributes; for enumerations, so very general, are seldom complete; but every attribute, common to several individuals, may be expressed by a general term, which is the sign of a general conception.

XI. [*How prone men are to form general conceptions* we may see from *the use of metaphor*, and of the other figures of speech grounded on similitude. Similitude is nothing else than an agreement of the objects compared in one or more attributes; and if there be no attribute common to both, there can be no similitude.]

The similitudes and analogies between the various objects that nature presents to us, are infinite and inexhaustible. They not only please, when displayed by the poet or wit in works of taste, but they are highly useful in the ordinary communication of our thoughts and sentiments by language. *In the rude languages of barbarous nations,* our similitudes and analogies supply the want of proper words to express men's sentiments, so much, that in such languages there is hardly a sentence without a metaphor; and if we examine the most copious and polished languages, we shall find that a great proportion of the words and phrases which are accounted the most proper, may be said to be the progeny of metaphor.

XII. *General conceptions not always expressed by general names.*—As foreigners, who settle in a nation as their home, come at last to be incorporated, and lose the denomination of

foreigners, so words and phrases, at first borrowed and figurative, by long use become denizens in the language, and lose the denomination of figures of speech. When we speak of the extent of knowledge, the steadiness of virtue, the tenderness of affection, the perspicuity of expression, no man conceives these to be metaphorical expressions; they are as proper as any in the language. Yet it appears upon the very face of them, that they must have been metaphorical in those who used them first; and that it is by use and prescription that they have lost the denomination of figurative, and acquired a right to be considered as proper words. This observation will be found to extend to a great part, perhaps the greatest part, of the words of the most perfect languages. [Sometimes the name of an individual is given to a general conception, and thereby the individual in a manner generalized. As when the Jew Shylock, in Shakspeare, says, "A Daniel come to judgment; yea, a Daniel!" In this speech, a Daniel is an attribute, or an universal. The character of Daniel, as a man of singular wisdom, is abstracted from his person, and considered as capable of being attributed to other persons.]

Upon the whole, these two operations of abstracting and generalizing appear common to all men that have understanding. The practice of them is, and must be, familiar to every man that uses language; but it is one thing to practise them, and another to explain how they are performed; as it is one thing to see, another to explain how we see. The first is the province of all men, and is the natural and easy operation of the faculties which God hath given us. The second is the province of philosophers, and though a matter of no great difficulty in itself, has been much perplexed by the ambiguity of words, and still more by the hypotheses of philosophers.

☞ Thus when I consider a billiard ball, its colour is one attribute, which I signify by calling it white; its figure is another, which is signified by calling it spherical; the firm cohesion of its parts is signified by calling it hard; its recoiling, when it strikes a hard body, is signified by its being called elastic; its origin, as being part of the tooth of an elephant, is signified by calling it ivory; and its use by calling it a billiard ball.

The words by which each of those attributes is signified, have one distinct meaning, and in this meaning are applicable to many individuals. They signify not any individual thing, but attributes common to many individuals; nor is it beyond the capacity of a child to understand them perfectly, and to apply them properly to every individual in which they are found.

As it is by analysing a complex object into its several attributes that we acquire our simplest abstract conceptions, it may be proper to compare this analysis with that which a chemist makes of a compounded body into the ingredients which enter

into its composition; for although there be such an analogy between these two operations, that we give to both the name of analysis or resolution, there is at the same time so great a dissimilitude in some respects, that we may be led into error, by applying to one what belongs to the other.

XIII. *Chemical different from intellectual analysis.*—[It is obvious, (1) that the chemical analysis is an operation of the *hand upon matter*, by various material instruments. The analysis we are now explaining is purely an operation of the *understanding*, which requires no material instrument, *nor produces any change upon any external thing*;] we shall therefore call it the intellectual or mental analysis.

[(2) In the chemical analysis, the compound body itself is the subject analysed. A subject *so imperfectly known*, that it may be compounded of various ingredients, when to our senses it appears perfectly simple; and *even when we are able to analyse it* into the different ingredients of which it is composed, we know not how or why the combination of those ingredients produces such a body.]

☞ Thus pure sea-salt is a body, to appearance, as simple as any in nature. Every the least particle of it, discernible by our senses, is perfectly similar to every other particle in all its qualities. The nicest taste, the quickest eye, can discern no mark of its being made up of different ingredients; yet, by the chemical art, it can be analysed into an acid and an alkali, and can be again produced by the combination of those two ingredients. But how this combination produces sea-salt, no man has been able to discover. The ingredients are both as unlike the compound as any bodies we know. No man could have guessed, before the thing was known, that sea-salt is compounded of those two ingredients; no man could have guessed, that the union of those two ingredients should produce such a compound as sea-salt. Such in many cases are the phenomena of the chemical analysis of a compound body.

XIV. *This difference should be observed.*—[If we consider the intellectual analysis of an object, it is evident that nothing of this kind can happen; because the thing analysed is not an external object imperfectly known; *it is a conception of the mind itself.* And to suppose that there can be any thing in a conception that is not conceived, is a contradiction.]

[The reason of observing this difference between those two kinds of analysis is, that some philosophers, in order to support their systems, have maintained, that a complex idea may have the appearance of the most perfect simplicity, and retain no similitude of any of the simple ideas of which it is compounded; just as a white colour may appear perfectly simple, and retain no similitude to any of the seven primary colours of which it is com-

pounded; or as a chemical composition may appear perfectly simple, and retain no similitude to any of the ingredients.]

XV. *Wrong deduction from this analogy.*—[From which those philosophers have drawn this important conclusion, that a cluster of the ideas of sense, properly combined, may make the idea of a mind; and that all the ideas, *which Mr. Locke calls ideas of reflection, are only compositions of the ideas which we have by our five senses.* From this the transition is easy, that if a proper composition of the ideas of matter may make the idea of a mind, then a proper composition of matter itself may make a mind, and that man is only a piece of matter curiously formed.]

XVI. *Easily overturned.*—In this curious system, the whole fabric rests upon this foundation, that a complex idea, which is made up of various simple ideas, may appear to be perfectly simple, and to have no marks of composition, because a compound body may appear to our senses to be perfectly simple.

Upon this fundamental proposition of this system I beg leave to make two remarks.

[1. Supposing it to be true, it affirms only what *may be.* We are indeed in most cases very imperfect judges of what may be. But this we know, that were we ever so certain that a thing may be, this is no good reason for believing that it really is.] A *may be* is a mere hypothesis, which may furnish matter of investigation, but is not entitled to the least degree of belief. The transition from what may be to what really is, is familiar and easy to those who have a predilection for a hypothesis; but to a man who seeks truth without prejudice or prepossession, it is a very wide and difficult step, and he will never pass from the one to the other, without evidence not only that the thing may be, but that it really is.

2. As far as I am able to judge, this, which it is said may be, *cannot be.* That a complex idea should be made up of simple ideas, so that to a ripe understanding reflecting upon that idea, there should be no appearance of composition, nothing similar to the simple ideas of which it is compounded, seems to me to involve a contradiction. [The idea is a conception of the mind. If any thing more than this is meant by the idea, I know not what it is; and I wish both to know what it is, and to have proof of its existence. Now that there should be any thing in the conception of an object which is not conceived, appears to me as manifest a contradiction, as that there should be an existence which does not exist, or that a thing should be conceived, and not conceived at the same time.]

But, say these philosophers, a white colour is produced by the composition of the primary colours, and yet has no resemblance to any of them. I grant it. But what can be inferred from this with regard to the composition of ideas? [To bring this argu-

ment home to the point, they must say, that because a white colour is compounded of the primary colours, therefore the *idea* of a white colour is compounded of the ideas of the primary colours.] This reasoning, if it was admitted, would lead to innumerable absurdities. An opaque fluid may be compounded of two or more pellucid fluids. Hence we might infer with equal force, that the idea of an opaque fluid may be compounded of the idea of two or more pellucid fluids.

XVII. *Nature's way of compounding bodies*, and *our way* of compounding ideas, *are* so *different* in many respects, that we cannot reason from the one to the other, unless it can be found, that ideas are combined by fermentations and elective attractions, and may be analysed in a furnace by the force of fire and of menstruums. Until this discovery be made, we must hold those to be simple ideas, which, upon the most attentive reflection, have no appearance of composition; and those only to be the ingredients of complex ideas, which, by attentive reflection, can be perceived to be contained in them.

If the idea of mind, and its operations, may be compounded of the ideas of matter and its qualities, why may not the idea of matter be compounded of the ideas of mind? There is the same evidence for the last *may be* as for the first. And why may not the idea of sound be compounded of the ideas of colour; or the idea of colour of those of sound? Why may not the idea of wisdom be compounded of ideas of folly; or the idea of truth of ideas of absurdity? But we leave these mysterious *may bes* to them that have faith to receive them.

QUESTIONS FOR EXAMINATION.

By what operations of the mind are we enabled to form general conceptions?
Abstraction, or generalizing, which prior?
These two operations mutually subservient?
Attributes which cannot exist separately from the subject may be separated in our conception?
Objection to generalizing removed?
Distinction between abstract and general conceptions?
Foundation of general conceptions?
Whence does it appear that mankind are prone to form general conceptions?
General conceptions not always expressed by general names?
Chemical different from intellectual analysis?
Why should this difference be regarded?
Erroneous conclusion drawn from this analogy?
This inference easily overturned?

CHAPTER IV.

OF GENERAL CONCEPTIONS FORMED BY COMBINATION.

I. *Combining.*—As, by an intellectual analysis of objects, we form general conceptions of single attributes, (which, of all conceptions that enter into the human mind, are the most simple,) so, by combining several of these into one parcel, and giving a name to that combination, we form general conceptions that may be very complex, and at the same time very distinct.

☞ Thus one, who, by analysing extended objects, has got the simple notions of a point, a line, straight or curve, an angle, a surface, a solid, can easily conceive a plain surface, terminated by four equal straight lines meeting in four points at right angles. To this species of figure he gives the name of a square. In like manner, he can conceive a solid terminated by six equal squares, and give it the name of a cube. A square, a cube, and every name of mathematical figure, is a general term, expressing a complex general conception, made by a certain combination of the simple elements into which we analyse extended bodies.

Every mathematical figure is accurately defined, by enumerating the simple elements of which it is formed, and the manner of their combination. The definition contains the whole essence of it: and every property that belongs to it may be deduced by demonstrative reasoning from its definition. It is not a thing that exists, for then it would be an individual; but it is a thing that is conceived without regard to existence.

A farm, a manor, a parish, a county, a kingdom, are complex general conceptions, formed by various combinations and modifications of inhabited territory, under certain forms of government.

Different combinations of military men form the notions of a company, a regiment, an army.

The several crimes which are the objects of criminal law, such as theft, murder, robbery, piracy, what are they but certain combinations of human actions and intentions, which are accurately defined in criminal law, and which it is found convenient to comprehend under one name, and consider as one thing?

II. *The general utility of the distribution of things into genera and species, arises from a principle of our nature.*—When we observe, that nature, in her animal, vegetable, and inanimate productions, has formed many individuals that agree in many of their qualities and attributes, *we are led by natural instinct to expect their agreement* in other qualities, which we have not had occasion to perceive. Thus, a child who has once burnt his finger, by putting it in the flame of one candle, expects the same event if

he puts it in the flame of another candle, or in any flame, and is thereby led to think that the quality of burning belongs to all flame. This instinctive induction is not justified by the rules of logic, and it sometimes leads men into harmless mistakes, which experience may afterwards correct; but it preserves us from destruction in innumerable dangers to which we are exposed.

[The reason of taking notice of this principle in human nature in this place is, that the distribution of the productions of nature, into *genera* and *species*, becomes, on account of this principle, more generally useful.]

☞ The physician expects, that the rhubarb which has never yet been tried will have like medical virtues with that which he has prescribed on former occasions. Two parcels of rhubarb agree in certain sensible qualities, from which agreement they are both called by the same general name *rhubarb*. Therefore it is expected that they will agree in their medical virtues. And as experience has discovered certain virtues in one parcel, or in many parcels, we presume, without experience, that the same virtues belong to all parcels of rhubarb that shall be used.

☞ If a traveller meets a horse, an ox, or a sheep, which he never saw before, he is under no apprehension, believing these animals to be of a species that is tame and inoffensive. But he dreads a lion or a tiger, because they are of a fierce and ravenous species.

III. *We derive that knowledge of nature necessary for the purposes of life from two sources.*—We are capable of receiving innumerable advantages, and are exposed to innumerable dangers, from the various productions of nature, animal, vegetable, and inanimate. The life of man, if a hundred times longer than it is, would be insufficient to learn from experience the useful and hurtful qualities of every individual production of nature taken singly.

[The Author of nature hath made provision for our attaining that knowledge of his works which is necessary for our subsistence and preservation, (1) partly by the constitution of the productions of nature, and (2) partly by the constitution of the human mind.]

☞ For, *first*, in the productions of nature, great numbers of individuals are made so like to one another, both in their *obvious* and in their more *occult* qualities, that we are not only enabled, but invited, as it were, to reduce them into classes, and to give a general name to a class; a name which is common to every individual of the class, because it comprehends in its signification those qualities or attributes only that are common to all the individuals of that class.

☞ *Secondly*, The *human mind* is so framed, that, from the agreement of individuals in the *more obvious* qualities by which we reduce them into one class, we are naturally led to expect

that they will be found to agree in their *more latent* qualities, and in this we are seldom disappointed.

We have, therefore, a strong and rational inducement, both to distribute natural substances into classes, *genera* and *species*, under general names; and to do this with all the accuracy and distinctness we are able. For the more accurate our divisions are made, and the more distinctly the several species are defined, the more securely we may rely, that the qualities we find in one or in a few individuals will be found in all of the same species.

Every species of natural substances which has a name in language, is an attribute of many individuals, and is itself a combination of more simple attributes, which we observe to be common to those individuals.

We shall find a great part of the words of every language, nay, I apprehend, the far greater part, to signify combinations of more simple general conceptions, which men have found proper to be bound up, as it were, in one parcel, by being designated by one name.

☞ Some general conceptions there are, which may more properly be called *compositions* or *works* than mere combinations. Thus, one may conceive a machine which never existed. He may conceive an air in music, a poem, a plan of architecture, a plan of government, a plan of conduct in public or in private life, a sentence, a discourse, a treatise. ☞ Such compositions are things conceived in the mind of the author, not individuals that really exist; and the same general conception which the author had may be communicated to others by language.

Thus, the "Oceana" of Harrington was conceived in the mind of its author. The materials of which it is composed are things conceived, not things that existed. His senate, his popular assembly, his magistrates, his elections, are all conceptions of his mind, and the whole is one complex conception. And the same may be said of every work of the human understanding.

IV. *Our conceptions of natural things imperfect, of artificial not so.*—[Very different from these are (1) the works of God, which we behold. They are works of creative power, not of understanding only. They have a real existence. Our best conceptions of them are partial and imperfect. But of (2) the works of the human understanding our conception may be perfect and complete.] They are nothing but what the author conceived, and what he can express by language, so as to convey his conception perfectly to men like himself.

Although such works are indeed complex general conceptions, they do not so properly belong to our present subject. [They are more the objects of judgment and of taste, than of bare conception or simple apprehension.]

To return, therefore, to those complex conceptions which are

formed merely by combining those that are more simple. Nature has given us the power of combining such simple attributes, and such a number of them as we find proper; and of giving one name to that combination, and considering it as one object of thought.

The simple attributes of things, which fall under our observation, are not so numerous but that they may all have names in a copious language. But to give names to all the combinations that can be made of two, three, or more of them, would be impossible. The most copious languages have names but for a very small part.

V. *Combinations almost the same in all languages.*—[It may likewise be observed, that the combinations that have names are nearly, though not perfectly, the same in the different languages of civilized nations, that have intercourse with one another. Hence it is, that the lexicographer, for the most part, can give words in one language answering perfectly, or very nearly, to those of another; and what is wrote in a simple style in one language, can be translated, almost word for word, into another.]

From these observations we may conclude, that there are either (1) certain common principles of human nature, or (2) certain common occurrences of human life, which dispose men, out of an infinite number that might be formed, to form certain combinations rather than others.

VI. *Associating qualities.*—[Mr. Hume, in order to account for this phenomenon, has recourse to what he calls the associating qualities of ideas; to wit, *causation, contiguity* in time, and place, and *similitude.*] He conceives, "that one of the most remarkable effects of those associating qualities, is the complex ideas which are the common subject of our thoughts. ☞ That this also is the cause why languages so nearly correspond to one another. Nature in a manner pointing out to every one those ideas which are most proper to be united into a complex one."

I agree with this ingenious author, that nature in a manner points out those simple ideas which are most proper to be united into a complex one: But nature does this, not solely or chiefly by the relations between the simple ideas, of contiguity, causation, and resemblance; but rather by the fitness of the combinations we make, to aid our own conceptions, and to convey them to others by language easily and agreeably.

VII. *True cause of this coincidence.*—[The end and use of language, without regard to the associating qualities of ideas, will lead men that have common understanding to form such complex notions as are *proper for expressing their wants*, their thoughts, and their desires: and in every language we shall find these to be the complex notions that have names.]

In the rudest state of society, men must have occasion to form the general notions of man, woman, father, mother, son,

daughter, sister, brother, neighbour, friend, enemy, and many others, to express the common relations of one person to another.

If they are employed in hunting, they must have general terms to express the various implements and operations of the chase. Their houses and clothing, however simple, will furnish another set of general terms, to express the materials, the workmanship, and the excellences and defects of those fabrics. If they sail upon rivers, or upon the sea, this will give occasion to a great number of general terms, which otherwise would never have occurred to their thoughts.

The same thing may be said of agriculture, of pasturage, of every art they practise, and of every branch of knowledge they attain. The necessity of general terms for communicating our sentiments is obvious; and the invention of them, as far as we find them necessary, requires no other talent but that degree of understanding which is common to men.

The notions of debtor and creditor, of profit and loss, of account, balance, stock on hand, and many others, are owing to commerce. The notions of latitude, longitude, course, distance run; and those of ships, and of their various parts, furniture and operations, are owing to navigation. The anatomist must have names for the various similar and dissimilar parts of the human body; and words, to express their figure, position, structure and use. The physician must have names for the various diseases of the body, their causes, symptoms, and means of cure.

The like may be said of the grammarian, the logician, the critic, the rhetorician, the moralist, the naturalist, the mechanic, and every man that professes any art or science.

When any discovery is made in art or in nature, which requires new combinations and new words to express it properly, the invention of these is easy to those who have a distinct notion of the thing to be expressed; and such words will readily be adopted, and receive the public sanction.

VIII. *That the true end of language is the proper expression of our wants, proved.*—[If, on the other hand, any man of eminence, through vanity or want of judgment, should invent new words, to express combinations that have neither *beauty nor utility*, or which may as well be expressed in the current language, his authority may give them currency for a time with servile imitators, or blind admirers: but the judicious will laugh at them, and they will soon lose their credit.] So true was the observation made by Pomponius Marcellus, an ancient grammarian, to Tiberius Cæsar. ☞ "You, Cæsar, have power to make a man a denizen of Rome, but not to make a word a denizen of the Roman language."

[Among nations that are civilized, and have intercourse with

one another, the most necessary and useful arts will be common; the important parts of human knowledge will be common; their several languages will be fitted to it, and consequently to one another.]

New inventions of general use give an easy birth to new complex notions and new names, which spread as far as the invention does. How many new complex notions have been formed, and names for them invented in the languages of Europe, by the modern inventions of printing, of gunpowder, of the mariner's compass, of optical glasses? The simple ideas combined in those complex notions, and the associating qualities of those ideas, are very ancient, but they never produced those complex notions until there was use for them.

What is peculiar to a nation in its customs, manners, or laws, will give occasion to complex notions and words peculiar to the language of that nation. Hence it is easy to see, why an *impeachment*, and an *attainder*, in the English language, and *ostracism* in the Greek language, have not names answering to them in other languages.

☞ I apprehend, therefore, that it is *utility*, and not the associating qualities of the ideas, that has led men to form only certain combinations, and to give names to them in language, while they neglect an infinite number that might be formed.

IX. *The common occurrences of life*, in the intercourse of men, and in their occupations, *give occasion to many complex notions.*—We see an individual occurrence, which draws our attention more or less, and may be a subject of conversation. Other occurrences, similar to this in many respects, have been observed, or may be expected. It is convenient that we should be able to speak of what is common to them all, leaving out the unimportant circumstances of time, place, and persons. This we can do with great ease, by giving a name to what is common to all those individual occurrences. Such a name is a great aid to language, because it comprehends, in one word, a great number of simple notions, which it would be very tedious to express in detail.

Thus men have formed the complex notions of eating, drinking, sleeping, walking, riding, running, buying, selling, ploughing, sowing, a dance, a feast, war, a battle, victory, triumph; and others without number.

Such things must frequently be the subject of conversation; and if we had not a more compendious way of expressing them than by a detail of all the simple notions they comprehend, we should lose the benefit of speech.

The different talents, dispositions, and habits of men in society, being interesting to those who have to do with them, will in every language have general names; such as wise, foolish, knowing, ignorant, plain, cunning. In every operative art, the tools, instru-

ments, materials, the work produced, and the various excellences and defects of these, must have general names.

The various relations of persons, and of things which cannot escape the observation of men in society, lead us to many complex general notions; such as father, brother, friend, enemy, master, servant, property, theft, rebellion.

The terms of art in the sciences make another class of general names of complex notions; as in mathematics, axiom, definition, problem, theorem, demonstration.

X. *Locke's mixed modes and relations.*—I do not attempt a complete enumeration even of the classes of complex general conceptions. [Those I have named as a specimen, I think, are mostly comprehended under what Mr. Locke calls *mixed modes and relations;*] which, he justly observes, have names given them in language, in preference to innumerable others that might be formed; for this reason only, that they are useful for the purpose of communicating our thoughts by language.

In all the languages of mankind, not only the writings and discourses of the learned, but the conversation of the vulgar, is almost entirely made up of general words, which are the signs of general conceptions, either simple or complex. And in every language, we find the terms signifying complex notions to be such, and only such, as the use of language requires.

There remains a very large class of complex general terms, on which I shall make some observations; I mean those by which we name the species, genera, and tribes of *natural substances.*

It is utility, indeed, that leads us to give general names to the various species of natural substances; but, in combining the attributes which are included under the specific name, we are more aided and directed by nature, than in forming other combinations of mixed modes and relations. In the last, the ingredients are brought together in the occurrences of life, or in the actions or thoughts of men. But, in the first, the ingredients are united by nature in many individual substances which God has made. We form a general notion of those attributes, wherein many individuals agree. We give a specific name to this combination; which name is common to all substances having those attributes, which either do or may exist. The specific name comprehends neither more nor fewer attributes than we find proper to put into its definition. It comprehends not time, nor place, nor even existence, although there can be no individual without these.

XI. *The power of forming general ideas of genera and species necessary to the purposes of life.*—[This work of the understanding is absolutely necessary for speaking intelligibly of the productions of nature, and for reaping the benefits we receive, and avoiding the dangers we are exposed to from them. The indi-

viduals are so many, that to give a proper name to each would be beyond the power of language. If a good or bad quality was observed in an individual, of how small use would this be, if there was not a species in which the same quality might be expected ?]

☞ Without some general knowledge of the qualities of natural substances, *human life* could not be preserved. And there can be no general knowledge of this kind, without reducing them to species under specific names. For this reason, among the rudest nations, we find names for fire, water, earth, air, mountains, fountains, rivers; for the kinds of vegetables they use; of animals they hunt or tame, or that are found useful or hurtful.

Each of those names signifies in general a substance having a certain combination of attributes. The name therefore must be common to all substances in which those attributes are found.

Such general names of substances being found in all vulgar languages, before philosophers began to make accurate divisions, and less obvious distinctions, it is not to be expected that their meaning should be more precise than is necessary for the common purposes of life.

As the knowledge of nature advances, more species of natural substances are observed, and their useful qualities discovered. In order that this important part of human knowledge may be communicated, and handed down to future generations, it is not sufficient that the species have names. Such is the fluctuating state of language, that a general name will not always retain the same precise signification, unless it have a definition in which men are disposed to acquiesce.

There was undoubtedly a great fund of natural knowledge among the Greeks and Romans in the time of Pliny. There is a great fund in his "Natural History;" but much of it is lost to us, for this reason among others, that we know not what species of substance he means by such a name.

Nothing could have prevented this loss but an accurate definition of the name, by which the species might have been distinguished from all others, as long as that name and its definition remained.

To prevent such loss in future times, modern philosophers have very laudably attempted to give names and accurate definitions of all the known species of substances wherewith the bountiful Creator hath enriched our globe.

This is necessary, in order to form a copious and distinct language concerning them, and consequently to facilitate our knowledge of them, and to convey it to future generations.

XII. *Every species that is known to exist ought to have a name:* and that name ought to be defined by such attributes as serve best to distinguish the species from all others.

Nature invites to this work, by having formed things so as to make it both easy and important.

For, *first*, We perceive numbers of individual substances so like in their *obvious* qualities, that the most unimproved tribes of men consider them as of one species, and give them one common name.

Secondly, The more *latent* qualities of substances are generally the same in all the individuals of a species: so that what, by observation or experiment, is found in a few individuals of a species, is presumed, and commonly found to belong to the whole. By this we are enabled, from particular facts, to draw general conclusions. This kind of induction is indeed the master-key to the knowledge of nature, without which we could form no general conclusions in that branch of philosophy.

And, *thirdly*, By the very constitution of our nature, we are led, without reasoning, to ascribe to the whole species what we have found to belong to the individuals. ☞ It is thus we come to know that fire burns, and water drowns; that bodies gravitate, and bread nourishes.

The species of two of the kingdoms of nature, to wit, the *animal*, and the *vegetable*, seem to be fixed by nature by the power they have of producing their like. And in these, men in all ages and nations have accounted the parent and the progeny of the same species. The differences among naturalists, with regard to the species of these two kingdoms, are very inconsiderable, and may be occasioned by the changes produced by soil, climate, and culture, and sometimes by monstrous productions, which are comparatively rare.

In the *inanimate* kingdom we have not the same means of dividing things into species, and therefore the limits of species seem to be more arbitrary: but from the progress already made, there is ground to hope, that even in this kingdom, as the knowledge of it advances, the various species may be so well distinguished and defined as to answer every valuable purpose.

[When the species are so numerous as to burden the memory, it is greatly assisted by distributing them into *genera*; the *genera* into *tribes*, the *tribes* into *orders*, and the orders into *classes*.

Such a regular distribution of natural substances, by divisions and subdivisions, has got the name of a system.]

XIII. *Such a system helps the memory and facilitates definition.*—It is not a system of truths, but a system of general terms, with their definitions; and it is not only a great *help to memory*, but *facilitates* very much the *definition* of the terms. For the definition of the genus is common to all the species of that genus, and so is understood in the definition of each species, without the trouble of repetition. In like manner, the definition of a

tribe is understood in the definition of every genus, and every species of that tribe; and the same may be said of every superior division.

The effect of such a systematical distribution of the productions of nature, is seen in our systems of zoology, botany, and mineralogy; in which a species is commonly defined accurately in a line or two, which, without the systematical arrangement, could hardly be defined in a page.

With regard to the utility of systems of this kind, men have gone into contrary extremes; some have treated them with contempt, as a mere dictionary of words; others, perhaps, rest in such systems, as all that is worth knowing in the works of nature.

On the one hand, it is not the intention of such systems to communicate all that is known of the natural productions which they describe. The properties most fit for defining and distinguishing the several species, are not always those that are most useful to be known. To discover and to communicate the uses of natural substances in life, and in the arts, is no doubt that part of the business of a naturalist which is the most important; and the systematical arrangement of them is chiefly to be valued for its subserviency to this end. This every judicious naturalist will grant.

But, on the other hand, the labour is not be despised, by which the road to a useful and important branch of knowledge is made easy in all time to come; especially when this labour requires both extensive knowledge and great abilities.

The talent of arranging properly, and defining accurately, is so rare, and at the same time so useful, that it may very justly be considered as a proof of real genius, and as entitled to a high degree of praise. There is an intrinsic beauty in arrangement, which captivates the mind, and gives pleasure, even abstracting from its utility; as in most other things, so in this particularly, nature has joined beauty with utility. The arrangement of an army in the day of battle is a grand spectacle. The same men crowded in a fair, have no such effect. It is not more strange therefore that some men spend their days in studying systems of nature, than that other men employ their lives in the study of languages. The most important end of those systems, surely is to form a copious and an unambiguous language concerning the productions of nature, by which every useful discovery concerning them may be communicated to the present, and transmitted to all future generations, without danger of mistake.

General terms, especially such as are complex in their signification, will never keep one precise meaning without accurate definition; and accurate definitions of such terms can in no way

be formed so easily and advantageously, as by reducing the things they signify into a regular system.

XIV. ☞ Very eminent men in the *medical profession*, in order to remove all ambiguity in the names of diseases, and to advance the healing art, have of late attempted to reduce into a systematical order the diseases of the human body, and to give distinct names, and accurate definitions, of the several species, *genera*, orders, and classes, into which they distribute them; and I apprehend, that in every art and science, where the terms of the art have any ambiguity that obstructs its progress, this method will be found the easiest and most successful for the remedy of that evil.

It were even to be wished, that the general terms which we find in common language, as well as those of the arts and sciences, could be reduced to a systematical arrangement, and defined so as that they might be free from ambiguity; but perhaps the obstacles to this are insurmountable. I know no man who has attempted it but Bishop Wilkins in his Essay towards a real character and a philosophical language. The attempt was grand, and worthy of a man of genius.

The formation of such systems, therefore, of the various productions of nature, instead of being despised, ought to be ranked among the valuable improvements of modern ages, and to be the more esteemed that its utility reaches to the most distant future times, and, like the invention of writing, serves to embalm a most important branch of human knowledge, and to preserve it from being corrupted or lost.

QUESTIONS FOR EXAMINATION.

On what principle of our nature does the general utility of the division of things into genera and species depend?

Whence do we acquire that knowledge of nature which is necessary for the purposes of life?

Difference between complex ideas of objects of judgment and taste, and those of natural things?

How does it appear that combinations with names are almost the same amongst all civilized nations?

Hume's explanation of this coincidence?

The true cause developed?

The true end and use of language?

The ability to form general ideas of genera and species absolutely necessary to man in a civilized state?

CHAPTER V.

OBSERVATIONS CONCERNING THE NAMES GIVEN TO OUR GENFRAL NOTIONS.

I. *Confusion introduced into our speculations about general notions by the use of ambiguous terms.*—HAVING now explained, as well as I am able, those operations of the mind by which (1) we analyse the objects which nature presents to our observation, into their simple attributes, (2) giving a general name to each, and (3) by which we combine any number of such attributes into one whole, and give a general name to that combination, I shall offer some observations relating to our general notions, whether simple or complex.

[I apprehend that the names given to them by modern philosophers have contributed to darken our speculations about them, and to render them difficult and abstruse.

We call them general notions, conceptions, ideas. The words notion and conception, in their proper and most common sense, signify the act or operation of the mind in conceiving an object. In a figurative sense, they are sometimes put for the object conceived.] And I think they are rarely, if ever, used in this figurative sense, except when we speak of what we call general notions or general conceptions. The word idea, as it is used in modern times, has the same ambiguity.

Now, it is only in the last of these senses, and not in the first, that we can be said to have general notions or conceptions. The generality is in the object conceived, and not in the act of the mind by which it is conceived. Every act of the mind is an individual act, which does or did exist. But we have power to conceive things which neither do nor ever did exist. We have power to conceive attributes without regard to their existence. The conception of such an attribute is a real and individual act of the mind; but the attribute conceived is common to many individuals that do or may exist. We are too apt to confound an object of conception with the conception of that object. But the danger of doing this must be much greater when the object of conception is called a conception.

The Peripatetics gave to such objects of conception the names of universals, and of predicables. Those names had no ambiguity, and I think were much more fit to express what was meant by them than the names we use.

It is for this reason that I have so often used the word attribute, which has the same meaning with predicable. And for the same reason, I have thought it necessary repeatedly to warn the reader, that when, in compliance with custom, I speak of general

notions or general conceptions, I always mean things conceived, and not the act of the mind in conceiving them.

II. *The Pythagoreans and Platonists gave the name of "ideas" to* such *general objects of conception*, and to nothing else. As we borrowed the word idea from them, so that it is now familiar in all the languages of Europe, I think it would have been happy if we had also borrowed their meaning, and had used it only to signify what they meant by it. I apprehend we want an unambiguous word to distinguish things barely conceived from things that exist. If the word idea was used for this purpose only, it would be restored to its original meaning, and supply that want.

We may surely agree with the Platonists in the meaning of the word *idea*, without adopting their theory concerning ideas. We need not believe, with them, that ideas are eternal and self-existent, and that they have a more real existence than the things we see and feel.

[They were led to give existence to ideas, from the common prejudice, that every thing which is an object of conception must really exist; and having once given existence to ideas, the rest of their mysterious system about ideas followed of course; for things merely conceived, have neither beginning nor end, time nor place; they are subject to no change; they are the patterns and exemplars according to which the Deity made every thing that he made; for the work must be conceived by the artificer before it is made.]

These are undeniable attributes of the ideas of Plato, and if we add to them that of real existence, we have the whole mysterious system of Platonic ideas. Take away the attribute of existence, and suppose them not to be things that exist, but things that are barely conceived, and all the mystery is removed; all that remains is level to the human understanding.

III. *Modern schoolmen revived a name formerly applied to our general conceptions.*—[The word *essence* came to be much used among the schoolmen, and what the Platonists called the idea of a species, they called its essence. The word *essentia* is said to have been made by Cicero; but even his authority could not give it currency, until long after his time. It came at last to be used, and the schoolmen fell into much the same opinions concerning essences, as the Platonists held concerning ideas. The essences of things were held to be uncreated, eternal, and immutable.]

Mr. Locke distinguishes two kinds of essence, the real and the nominal. By the real essence he means the constitution of an individual, which makes it to be what it is. This essence must begin and end with the individual to which it belongs. It is not therefore a Platonic idea. But what Mr. Locke calls the nominal essence, is the constitution of a species, or that which

makes an individual to be of such a species; and this is nothing but that combination of attributes which is signified by the name of the species, and which we conceive without regard to existence.

IV. *The philosophic meaning of "idea" inapplicable to Locke's system.*—The essence of a species, therefore, is what the Platonists called the idea of the species.

If the word *idea* be restricted to the meaning which it bore among the Platonists and Pythagoreans, many things which Mr. Locke has said with regard to ideas will be just and true, and others will not.

(1) It will be true, that most words (indeed all general words) are the signs of ideas; but proper names are not; they signify individual things, and not ideas. (2) It will be true not only that there are general and abstract ideas, but that all ideas are general and abstract. (1) It will be so far from the truth, that all our simple ideas are got immediately, either from sensation, or from consciousness; that no simple idea is got by either, without the co-operation of other powers. The objects of sense, of memory, and of consciousness, are not ideas but individuals; they must be analysed by the understanding into their simple ingredients, before we can have simple ideas; and those simple ideas must be again combined by the understanding, in distinct parcels with names annexed, in order to give us complex ideas. (2) It will be probable not only that brutes have no abstract ideas, but that they have no ideas at all.]

I shall only add, that the learned author of the "Origin and Progress of Language," and perhaps his learned friend Mr. Harris, are the only modern authors I have met with, who restrict the word *idea* to this meaning. Their acquaintance with ancient philosophy led them to this. What pity is it that a word, which in ancient philosophy had a distinct meaning, and which, if kept to that meaning, would have been a real acquisition to our language, should be used by the moderns in so vague and ambiguous a manner, that it is more apt to perplex and darken our speculations, than to convey useful knowledge.

Advantages of being able to form abstract and general notions.*—From all that has been said about abstract and general conceptions, I think we may draw the following conclusions concerning them.

First, That it is by abstraction that the mind is furnished with all its most simple, and most *distinct notions:* the simplest objects of sense appear both complex and indistinct, until by abstraction they are analysed into their more simple elements; and the same may be said of the objects of memory and of consciousness.

* Distinct notions—genera and species—definitions—reasoning and language.

Secondly, Our most distinct complex notions are those that are formed by compounding the simple notions got by abstraction.

Thirdly, Without the powers of abstracting and generalising, it would be impossible to reduce things into any order and method, by dividing them into genera and species.

Fourthly, Without those powers there could be no definition; for definition can only be applied to universals, and no individual can be defined.

Fifthly, Without abstract and general notions there can neither be reasoning nor language.

Sixthly, As brute animals show no signs of being able to distinguish the various attributes of the same subject; of being able to class things into genera and species; to define, to reason, or to communicate their thoughts by artificial signs, as men do; I must think with Mr. Locke, that they have not the powers of abstracting and generalising; and that in this particular, nature has made a specific difference between them and the human species.

QUESTIONS FOR EXAMINATION.

What ambiguity in words has introduced confusion into our consideration of general notions?

To what conceptions did the Platonists give the name of "idea?"

A different name applied to general conceptions by the schoolmen?

If *idea* be taken in its original signification, what observations of Locke are thereby rendered false?

Advantages of being able to form abstract and general notions?

CHAPTER VI.

OPINIONS OF PHILOSOPHERS ABOUT UNIVERSALS.

1. *Fundamental principle of the ancient Sceptics.*—In the ancient philosophy, the doctrine of universals, that is, of things which we express by general terms, makes a great figure. The ideas of the Pythagoreans and Platonists, of which so much has been already said, were universals. All science is employed about universals as its object. It was thought that there can be no science, unless its object be something real and immutable; and therefore those who paid homage to truth and science, maintained that ideas or universals have a real and immutable existence.

[The Sceptics, on the contrary, (for there were sceptical philosophers in those early days,) maintained, *that all things are mutable, and in a perpetual fluctuation*; and from this principle inferred, that there is no science, no truth; that all is uncertain opinion.]

II. *To which the Platonists partly assented.*—[Plato, and his masters of the Pythagorean school, yielded this with regard to *objects of sense,* and acknowledged that there could be no science or certain knowledge concerning them: but they held, that there are objects of intellect of a superior order and nature, which are permanent and immutable. These are ideas, or universal natures, of which the objects of sense are only the images and shadows.]

To these ideas they ascribed, as I have already observed, the most magnificent attributes. Of man, of a rose, of a circle, and of every species of things, they believed that there is one idea or form, which existed from eternity, before any individual of the species was formed: that this idea is the exemplar or pattern, according to which the Deity formed the individuals of the species: that every individual of the species participates of this idea, which constitutes its essence; and that this idea is likewise an object of the human intellect, when, by due abstraction, we discern it to be one in all the individuals of the species.

III. *The Platonic idea may be viewed in three ways.*—[Thus the idea of every species, though one and immutable, might be considered in three different views or respects; *first,* as having an eternal existence before there was any individual of the species; *secondly,* as existing in every individual of that species, without division or multiplication, and making the essence of the species; and, *thirdly,* as an object of intellect and of science in man.]

IV. *The Aristotelian idea.*—Such I take to be the doctrine of Plato, as far as I am able to comprehend it. His disciple Aristotle rejected the first of these views of ideas as visionary, but differed little from his master with regard to the two last. [He did not admit the existence of universal natures antecedent to the existence of individuals; but he held, that every individual consists of matter and form: that the form (which I take to be what Plato calls the idea) is common to all the individuals of the species, and that the human intellect is fitted to receive the forms of things as objects of contemplation.] Such profound speculations about the nature of universals, we find even in the first ages of philosophy. I wish I could make them more intelligible to myself and to the reader.

The division of universals into five classes; to wit, genus, species, specific difference, properties, and accidents, is likewise very ancient, and I conceive was borrowed by the Peripatetics from the Pythagorean school.

Porphyry has given us a very distinct treatise upon these, as an introduction to Aristotle's categories. But he has omitted the intricate metaphysical questions that were agitated about their nature; such as, whether genera and species do really exist

in nature? Or, whether they are only conceptions of the human mind? If they exist in nature, whether they are corporeal or incorporeal? And whether they are inherent in the objects of sense, or disjoined from them? These questions, he tells us, for brevity's sake, he omits, because they are very profound, and require accurate discussion. It is probable, that these questions exercised the wits of the philosophers till about the twelfth century.

V. *Nominalists, Realists, Conceptualists.*—[About that time, Roscelinus or Ruscelinus, the master of the famous Abelard, introduced a new doctrine, that there is nothing universal but words or names. For this, and other heresies, he was much persecuted. However, by his eloquence and abilities, and those of his disciple Abelard, the doctrine spread, and those who followed it were called *Nominalists.* His antagonists, who held that there are things that are really universal, were called Realists. The scholastic philosophers, from the beginning of the twelfth century, were divided into these two sects. Some few took a middle road between the contending parties. That universality, which the *Realists* held to be in things themselves, Nominalists in names only, they held to be neither in things nor in names *only*, but in our conceptions. On this account they were called *Conceptualists:* but being exposed to the batteries of both the opposite parties, they made no great figure.]

When the sect of Nominalists was like to expire, it received new life and spirit from Occam, the disciple of Scotus, in the fourteenth century. Then the dispute about universals, "a parte rei," was revived with the greatest animosity in the schools of Britain, France, and Germany, and carried on, not by arguments only, but by bitter reproaches, blows, and bloody affrays, until the doctrines of Luther and the other reformers turned the attention of the learned world to more important subjects.

After the revival of learning, Mr. Hobbes adopted the opinion of the Nominalists. "Human Nature," chap. v. sect. 6. "It is plain, therefore," says he, "that there is nothing universal but names." And in his "Leviathan," part I. chap. iv. "There being nothing universal but names, proper names bring to mind one thing only; universals recall any one of many."

Mr. Locke, according to the division before mentioned, I think, may be accounted a Conceptualist. He does not maintain that there are things that are universal; but that we have general or universal ideas which we form by abstraction; and this power of forming abstract and general ideas, he conceives to be that which makes the chief distinction in point of understanding between men and brutes.

VI. *Mr. Locke's doctrine about abstraction has been combated by* two very powerful antagonists, Bishop *Berkeley and* Mr. *Hume,*

who have taken up the opinion of the Nominalists. The former thinks, "That the opinion, that the mind hath a power of forming abstract ideas, or notion of things, has had a chief part in rendering speculation intricate and perplexed, and has occasioned innumerable errors and difficulties in almost all parts of knowledge." That "abstract ideas are like a fine and subtile net, which has miserably perplexed and entangled the minds of men, with this peculiar circumstance, that by how much the finer and more curious was the wit of any man, by so much the deeper was he like to be ensnared, and faster held therein." That "among all the false principles that have obtained in the world, there is none hath a more wide influence over the thoughts of speculative men than this of abstract general ideas."

The good Bishop, therefore, in twenty-four pages of the "Introduction to his Principles of Human Knowledge," encounters this principle with a zeal proportioned to his apprehension of its malignant and extensive influence.

That the zeal of the sceptical philosopher against abstract ideas was almost equal to that of the Bishop, appears from his words, ("Treatise of Human Nature," book I. part I. sect. 7.) "A very material question has been started concerning abstract or general ideas, whether they be general or particular in the mind's conception of them? A great philosopher (he means Dr. Berkeley) has disputed the received opinion in this particular, and has asserted, that all general ideas are nothing but particular ones annexed to a certain term, which gives them a more extensive signification, and makes them recall, upon occasion, other individuals which are similar to them. As I look upon this to be one of the greatest and most valuable discoveries that have been made of late years in the republic of letters, I shall here endeavour to confirm it by some arguments, which I hope will put it beyond all doubt and controversy."

VII. *Berkeley and Hume employ an argumentum ad hominem in refutation of Locke's theory.*—I shall make an end of this subject, with some reflections on what has been said upon it by these two eminent philosophers.

[1. *First*, I apprehend that we cannot, with propriety, be said to have abstract and general ideas, either in the popular or in the philosophical sense of that word.] In the popular sense an idea is a thought; it is the act of the mind in thinking, or in conceiving any object. This act of the mind is always an individual act, and therefore there can be no general idea in this sense. In the philosophical sense, an idea is an image in the mind, or in the brain, which in Mr. Locke's system is the *immediate* object of thought; in the system of Berkeley and Hume the *only* object of thought. I believe there are no ideas of this kind, and therefore no abstract general ideas. Indeed, if there were really such

images in the mind, or in the brain, they could not be general, because every thing that really exists is an individual. Universals are neither acts of the mind, nor images in the mind.

[As, therefore, there are no general ideas in either of the senses in which the word idea is used by the moderns, Berkeley and Hume have in this question an advantage over Mr. Locke; and their arguments against him are good ad hominem.] They saw farther than he did into the just consequences of the hypothesis concerning ideas, which was common to them and to him; and they reasoned justly from this hypothesis, when they concluded from it, that there is neither a material world, nor any such power in the human mind as that of abstraction.

A triangle, in general, or any other universal, might be called an idea by a Platonist; but, in the style of modern philosophy, it is not an idea, nor do we ever ascribe to ideas the properties of triangles. It is never said of any idea, that it has three sides and three angles. We do not speak of equilateral, isosceles, or scalene ideas, nor of right angled, acute angled, or obtuse angled ideas. And if these attributes do not belong to ideas, it follows necessarily, that a triangle is not an idea. The same reasoning may be applied to every other universal.

VIII. *Sense in which "existence of universals" should be understood.*—Ideas are said to have a real existence in the mind, at least, while we think of them; but universals have no real existence. When we ascribe existence to them, it is not an existence in time or place, but existence in some individual subject; and this existence means no more but that they are truly attributes of such a subject. *Their existence is nothing but predicability, or the capacity of being attributed to a subject.* The name of predicables, which was given them in ancient philosophy, is that which most properly expresses their nature.

IX. *They are not the objects of imagination.*—[2. I think it must be granted, in the *second* place, that universals cannot be the objects of *imagination*, when we take that word in its strict and proper sense.] "I find," says Berkeley, "I have a faculty of imagining or representing to myself the ideas of those particular things I have perceived, and of variously compounding and dividing them. I can imagine a man with two heads, or the upper parts of a man joined to the body of a horse. I can imagine the hand, the eye, the nose, each by itself, abstracted or separated from the rest of the body. But then, whatever hand or eye I imagine, it must have some particular shape or colour. Likewise, the idea of a man that I frame to myself must be either of a white, or a black, or a tawny, a straight or a crooked, a tall, or a low, or a middle-sized man."

X. *The distinction between conception and imagination refutes Berkeley's reasoning.*—I believe every man will find in himself

what this ingenious author found, that he cannot imagine a man without colour, or stature, or shape.

[Imagination, as we before observed, properly signifies a conception of *the appearance an object would make to the eye*, if actually seen.* *An universal is not an object of any external sense*, and therefore cannot be imagined;] but it may be distinctly conceived. When Mr. Pope says, "The proper study of mankind is man," I conceive his meaning distinctly, though I neither imagine a black or a white, a crooked or a straight man. [The distinction between conception and imagination is real, though it be too often overlooked, and the words taken to be synonymous. I can conceive a thing that is impossible, but I cannot distinctly imagine a thing that is impossible. I can conceive a proposition or a demonstration, but I cannot imagine either. I can conceive understanding and will, virtue and vice, and other attributes of mind, but I cannot imagine them. In like manner, I can distinctly conceive universals, but I cannot imagine them.]

XI. *It is no objection that the mode of conceiving universals is unknown to us.*—[As to the manner *how* we conceive universals, I confess my ignorance. I know not how I hear, or see, or remember, and as little do I know how I conceive things that have no existence. *In all our original faculties*, the fabric and manner of operation is, I apprehend, beyond our comprehension, and perhaps is perfectly understood by him only who made them.]

But we ought not to deny a fact of which we are conscious, though we know not how it is brought about. And I think we may be certain that universals are not conceived by means of images of them in our minds, because there can be no image of an universal.

XII. [3. It seems to me, that *on this question Mr. Locke and his two antagonists have divided the truth between them.*] He saw very clearly, that the power of forming abstract and general conceptions is one of the most distinguishing powers of the human mind, and puts a specific difference between man and the brute creation. But he did not see that this power is perfectly irreconcileable to his doctrine concerning ideas.

His opponents saw this inconsistency; but, instead of rejecting the hypothesis of ideas, they explain away the power of abstraction, and leave no specific distinction between the human understanding and that of brutes.

XIII. [4. Berkeley, in his reasoning against abstract general ideas, *seems* unwillingly or unwarily *to grant all that is necessary to support abstract and general conceptions.*

"A man," he says, "may consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides. So far he may abstract. But this will

* Vide Essay IV., Chap. I., sect. xvii.

never prove that he can frame an abstract general inconsistent idea of a triangle."]

If a man may consider a figure merely as triangular, he must have some conception of this object of his consideration: for no man can consider a thing which he does not conceive. He has a conception, therefore, of a triangular figure, merely as such. I know no more that is meant by an abstract general conception of a triangle.

He that considers a figure merely as triangular, must understand what is meant by the word triangular. ☞ If to the conception he joins to this word, he adds any particular quality of angles or relation of sides, he misunderstands it, and does not consider the figure merely as triangular. Whence I think it is evident, that he who considers a figure merely as triangular must have the conception of a triangle, abstracted from any quality of angles or relation of sides.

The bishop, in like manner, grants, "That we may consider Peter so far forth as man, or so far forth as animal, without framing the forementioned abstract idea, inasmuch as all that is perceived is not considered." It may here be observed, that he who considers Peter so far forth as man, or so far forth as animal, must conceive the meaning of those abstract general words *man* and *animal*, and he who conceives the meaning of them, has an abstract general conception.

XIV. *Man has not the power of framing abstract ideas, according to Berkeley.*—From these concessions, one would be apt to conclude that the bishop thinks that we can abstract, but that we cannot frame abstract *ideas*; and in this I should agree with him. But I cannot reconcile his concessions with the general principle he lays down before. ["To be plain," says he, "I deny that I can abstract one from another, or conceive separately those qualities which it is impossible should exist so separated."] This appears to me (1) inconsistent with the concessions above mentioned, and (2) inconsistent with *experience*.

XV. *This denial contradicts our experience.*—[If we can consider a figure merely as triangular, without attending to the particular quality of the angles or relation of the sides, this, I think, is conceiving separately things which cannot exist so separated: for surely a triangle cannot exist without a particular quality of angles and relation of sides. And it is well known from *experience*, that a man may have a distinct conception of a triangle, without having any conception or knowledge of many of the properties without which a triangle cannot exist.]

☞ Let us next consider the bishop's notion of *generalizing*. He does not absolutely deny that there are general ideas, but only that there are *abstract* general ideas. "An idea," he says, "which, considered in itself, is particular, becomes general, by

being made to represent or stand for all other particular ideas of the *same sort*. To make this plain by an example, suppose a geometrician is demonstrating the method of cutting a line in two equal parts. He draws, for instance, a black line of an inch in length. This, which is in itself a particular line, is nevertheless, with regard to its signification, general; since, as it is there used, it represents all particular lines whatsoever; so that what is demonstrated of it, is demonstrated of all lines, or, in other words, of a line in general. And as that particular line becomes general by being made a sign, so the name *line*, which, taken absolutely, is particular, by being a sign, is made general."

XVI. *An argumentum ad hominem.*—[Here I observe, that when a particular idea is made a sign to represent and stand for all of a sort, this supposes *a distinction of things into sorts or species*. To be of a sort implies having those attributes which characterise the sort, and are common *to all the individuals* that belong to it. There cannot, therefore, be a sort without general attributes, nor can there be any conception of a sort *without a conception of those general attributes which distinguish it*. The conception of a sort, therefore, is an abstract general conception.]

The particular idea cannot surely be made a sign of a thing of which we have no conception. I do not say that you must have an idea of the sort, but surely you ought to understand or conceive what it means, when you make a particular idea a representative of it, otherwise your particular idea represents, you know not what.

When I demonstrate any general property of a triangle, such as, that the three angles are equal to two right angles, I must understand or conceive distinctly what is common to all triangles. I must distinguish the common attributes of all triangles from those wherein particular triangles may differ. And if I conceive distinctly what is common to all triangles, without confounding it with what is not so, this is to form a general conception of a triangle. And without this, it is impossible to know that the demonstration extends to all triangles.

XVII. *Replied to.*—[The bishop takes particular notice of this argument, and makes this answer to it. "Though the idea I have in view, whilst I make the demonstration, be, for instance, that of an isosceles rectangular triangle, whose sides are of a determinate length, I may nevertheless be certain that it extends to all other rectilinear triangles, of what sort or bigness soever; and that because neither the right angle, nor the equality or determinate length of the sides, are at all concerned in the demonstration."]

XVIII. *Ineffectively.*—[But if he do not, in the idea he has in view, clearly distinguish what is common to all triangles from what is not, it would be impossible to discern *whether something*

that is not common be concerned in the demonstration or not. In order, therefore, to perceive that the demonstration extends to all triangles, it is necessary to have *a distinct conception of what is common to all triangles, excluding from that conception all that is not common.* And this is all I understand by an abstract general conception of a triangle.]

Berkeley catches an advantage to his side of the question, from what Mr. Locke expresses (too strongly indeed) of the difficulty of framing abstract general ideas, and the pains and skill necessary for that purpose. From which the bishop infers, that a thing so difficult cannot be necessary for communication by language, which is so easy and familiar to all sorts of men.

There may be some abstract and general conceptions that are difficult, or even beyond the reach of persons of weak understanding; but there are innumerable, which are not beyond the reach of children. It is impossible to learn language without acquiring general conceptions; for there cannot be a single sentence without them. I believe the forming these, and being able to articulate the sounds of language, make up the whole difficulty that children find in learning language at first.

But this difficulty, we see, they are able to overcome so early as not to remember the pains it cost them. They have the strongest inducement to exert all their labour and skill, in order to understand, and to be understood; and they no doubt do so.

XIX. *The forming of abstract notions not difficult or laborious.*—[The labour of forming abstract notions, is the labour of learning to speak, and to understand what is spoken.] As the words of every language, excepting a few proper names, are general words, the minds of children are furnished with general conceptions, in proportion as they learn the meaning of general words. I believe most men have hardly any general notions but those which are expressed by the general words they hear and use in conversation. The meaning of some of these is learned by a definition, which at once conveys a distinct and accurate general conception. The meaning of other general words we collect, by a kind of induction, from the way in which we see them used on various occasions, by those who understand the language. Of these our conception is often less distinct, and in different persons is perhaps not perfectly the same.

"Is it not a hard thing," says the bishop, "that a couple of children cannot prate together of their sugar-plums and rattles, and the rest of their little trinkets, till they have first tacked together numberless inconsistencies, and so formed in their minds abstract general ideas, and annexed them to every common name they make use of?"

However hard a thing it may be, it is an evident truth, that a couple of children, even about their sugar-plums and their

rattles, cannot prate so as to understand, and be understood, until they have learned to conceive the meaning of many general words, and this, I think, is to have general conceptions.

5. Having considered the sentiments of Bishop Berkeley on this subject, let us next attend to those of Mr. Hume, as they are expressed, part i. sect. 7, "Treatise of Human Nature." He agrees perfectly with the Bishop, "That all general ideas are nothing but particular ones annexed to a certain term, which gives them a more extensive signification, and makes them recall upon occasion other individuals which are similar to them. A particular idea becomes general, by being annexed to a general term; that is, to a term, which, from a customary conjunction, has a relation to many other particular ideas, and readily recalls them in the imagination. Abstract ideas are therefore in themselves individual, however they may become general in their representation. The image in the mind is only that of a particular object, though the application of it in our reasoning be the same as if it was universal."

Although Mr. Hume looks upon this to be one of the greatest and most valuable discoveries that has been made of late years in the republic of letters, it appears to be no other than the opinion of the nominalists, about which so much dispute was held from the beginning of the twelfth century down to the Reformation, and which was afterwards supported by Mr. Hobbes. I shall briefly consider the arguments, by which Mr. Hume hopes to have put it beyond all doubt and controversy.

XX. *Hume's arguments for the rejection of all abstract general conceptions, as impossible.*—[*First*, He endeavours to prove, by three arguments, that it is utterly impossible to conceive any quantity or quality, without forming a precise notion of its degrees.]

This is indeed a great undertaking; but if he could prove it, it is not sufficient for his purpose; *for two reasons.*

[*First*, Because there are many attributes of things, *besides quantity and quality;* and it is incumbent upon him to prove, that it is impossible to conceive any attribute, without forming a precise notion of its degree.] Each of the ten categories of Aristotle is a genus, and may be an attribute: and if he should prove of two of them, to wit, quantity and quality, that there can be no general conception of them; there remain eight behind, of which this must be proved.

[The other reason is, because, though it were impossible to conceive any quantity or quality, without forming a precise notion of its degree, it does not follow that it is impossible to have a *general* conception even of quantity and quality. The conception of a pound troy is the conception of a quantity, and of the precise degree of that quantity; but it is an abstract general conception notwithstanding, because *it may be the attribute of*

many individual bodies, and of many kinds of bodies. He ought therefore to have proved, that we cannot conceive quantity or quality, or any other attribute, *without joining it inseparably to some individual subject*.]

This remains to be proved, which will be found no easy matter. For instance, I conceive what is meant by a Japanese as distinctly as what is meant by an Englishman or a Frenchman. It is true, a Japanese is neither quantity nor quality, but it is an attribute common to every individual of a populous nation. I never saw an individual of that nation, and, if I can trust my consciousness, the general term does not lead me to imagine one individual of the sort as a representative of all others.

XXI. *Quantity or quality inconceivable without a precise notion of its degree, according to Hume*:—Though Mr. Hume, therefore, undertakes much, yet, if he could prove all he undertakes to prove, it would by no means be sufficient to show that we have no abstract general conceptions.

[Passing this, let us attend to his arguments for proving this extraordinary position, that *it is impossible to conceive any quantity or quality, without forming a precise notion of its degree*.]

[The first argument is, that it is impossible to distinguish things that are not *actually* separable. "The precise length of a line is not different or distinguishable from the line."]

[I have before endeavoured to show, that things inseparable in their nature may be distinguished in our conception. And we need go no farther to be convinced of this, than the instance here brought to prove the contrary. The precise length of a line, he says, is not distinguishable from the line. When I say, *this is a line*, I say and mean one thing. When I say *it is a line of three inches*, I say and mean another thing. If this be not to distinguish the precise length of the line from the line, I know not what it is to distinguish.]

[Second argument. "Every object of sense, that is, every impression, is an individual, having its determinate degrees of quantity and quality: but whatever is true of the impression is true of the idea, as they differ in nothing but their strength and vivacity."]

The conclusion in this argument is indeed justly drawn from the premises. If it be true that ideas differ in nothing from objects of sense but in strength and vivacity, as it must be granted that all the objects of sense are individuals, it will certainly follow that all ideas are individuals. Granting therefore the justness of this conclusion, I beg leave to draw two other conclusions from the same premises, which will follow no less necessarily.

First, If ideas differ from the objects of sense only in strength and vivacity, it will follow, that the idea of a lion is a lion of less strength and vivacity. And hence may arise a very im-

portant question, Whether the idea of a lion may not tear in pieces and devour the ideas of sheep, oxen, and horses, and even of men, women, and children?

Secondly, If ideas differ only in strength and vivacity from the objects of sense, it will follow, that objects, merely conceived, are not ideas; for such objects differ from the objects of sense in respects of a very different nature from strength and vivacity. [Every object of sense must have a real existence, and time and place; but things merely conceived may neither have existence, nor time nor place; and therefore, *though there should be no abstract ideas, it does not follow, that things abstract and general may not be conceived.*]

[The third argument is this: "It is a principle generally received in philosophy, that every thing in nature is individual; and that it is utterly absurd to suppose a triangle really existent, which has no precise proportion of sides and angles. If this, therefore, be absurd in fact and reality, it must be absurd in idea, since *nothing of which we can form a clear and distinct idea is absurd or impossible.*"]

[I acknowledge it to be impossible, that a triangle should really exist which has no presise proportion of sides and angles; and impossible that any being should exist which is not an individual being; for, I think, a being and an individual being mean the same thing: but *that there can be no attributes common to many individuals, I do not acknowledge.* Thus, to many figures that really exist, it may be common that they are triangles; and to many bodies that exist, it may be common that they are fluid. *Triangle and fluid are not beings, they are attributes of beings.*]

As to the principle here assumed, that nothing of which we can form a clear and distinct idea is absurd or impossible, I refer to what was said upon it, chap. iii., Essay IV. It is evident, that in every mathematical demonstration, ad absurdum, of which kind almost one half of mathematics consists, we are required to suppose, and consequently to conceive, a thing that is impossible. From that supposition we reason, until we come to a conclusion that is not only impossible, but absurd. From this we infer, that the proposition supposed at first is impossible, and therefore that its contradictory is true.

As this is the nature of all demonstrations ad absurdum, it is evident, (I do not say that we can have a clear and distinct idea, but) that we can clearly and distinctly conceive things impossible.

XXII. *Substitute for abstract ideas in reasoning.*—The rest of Mr. Hume's discourse upon this subject is employed in explaining how *an individual idea*, annexed to a general term, *may serve all the purposes in reasoning*, which have been ascribed to *abstract general ideas.*

["When we have found a resemblance among several objects

that often occur to us, we apply the same name to all of them, whatever differences we may observe in the degrees of their quantity and quality, and whatever other differences may appear among them. After we have acquired a custom of this kind, the hearing of that name revives the idea of one of these objects, and makes the imagination conceive it, with all its circumstances and proportions."] But along with this idea, there is a readiness to survey any other of the individuals to which the name belongs, and to observe, that no conclusion be formed contrary to any of them. If any such conclusion is formed, those individual ideas which contradict it, immediately crowd in upon us, and make us perceive the falsehood of the proposition. If the mind suggest not always these ideas upon occasion, it proceeds from some imperfection in its faculties; and such a one as is often the source of false reasoning and sophistry.

This is in substance the way in which he accounts for what he calls "the foregoing paradox, that some ideas are particular in their nature, but general in their representation." Upon this account I shall make some remarks.

XXIII. *Its inadmissibility.*—[1. He allows that we find a resemblance among several objects, and such a resemblance as leads us to apply the same name to all of them. *This concession is sufficient to show that we have general conceptions.* There can be no resemblance in objects that have no common attribute; and if there be attributes belonging in common to several objects, and in man a faculty to observe and conceive these, and to give names to them, this is to have general conceptions.]

I believe indeed we may have an indistinct perception of resemblance, without knowing wherein it lies. Thus, I may see a resemblance between one face and another, when I cannot distinctly say in what feature they resemble: but by analysing the two faces, and comparing feature with feature, I may form a distinct notion of that which is common to both. A painter, being accustomed to an analysis of this kind, would have formed a distinct notion of this resemblance at first sight; to another man it may require some attention.

There is therefore an indistinct notion of resemblance when we compare the objects only in gross; and this I believe brute animals may have. There is also a distinct notion of resemblance when we analyse the objects into their different attributes, and perceive them to agree in some, while they differ in others. It is in this case only that we give a name to the attributes wherein they agree, which must be a common name, because the thing signified by it is common. Thus, when I compare cubes of different matter, I perceive them to have this attribute in common that they are comprehended under six equal squares; and this attribute only, is signified by applying the name of *cube* to them all. When I compare clean linen with snow, I perceive

them to agree in colour; and when I apply the name of white to both, this name signifies neither snow nor clean linen, but the attribute which is common to both.

2. The author says, that when we have found a resemblance among several objects, we apply the same name to all of them.

☞ It must here be observed, that there are two kinds of names which the author seems to confound, though they are very different in nature, and in the power they have in language. There are proper names, and there are common names or appellatives. The first are the names of individuals. The same proper name is never applied to several individuals on acccount of their similitude, because the very intention of a proper name is to distinguish one individual from all others; and hence it is a maxim in grammar, that proper names have no plural number. A proper name signifies nothing but the individual whose name it is; and when we apply it to the individual, we neither affirm nor deny any thing concerning him.

A common name or appellative is not the name of any individual, but a general term signifying something that is or may be common to several individuals. Common names therefore signify common attributes. Thus, when I apply the name of son or brother to several persons, this signifies and affirms that this attribute is common to all of them.

[From this it is evident, that the applying the same name to several individuals, on account of their resemblance, can, in consistence with grammar and common sense, mean nothing else than the expressing by a general term something that is common to those individuals, and which therefore may be truly affirmed of them all.]

[3. The author says, "It is certain that we form the idea of individuals, whenever we use any general term. The word raises up an individual idea, and makes the imagination conceive it, with all its particular circumstances and proportions."]

This fact he takes a great deal of pains to account for, from the effect of custom.

But the fact should be ascertained before we take pains to account for it. I can see no reason to believe the fact; and I think a farmer can talk of his sheep, and his black cattle, without conceiving in his imagination one individual, with all its circumstances and proportions. If this be true, the whole of his theory of general ideas falls to the ground. To me it appears, that when a general term is well understood, it is only by accident if it suggest some individual of the kind; but this effect is by no means constant.

XXIV. I understand perfectly what mathematicians call a line of the fifth order; yet I never conceived in my imagination any one of the kind in all its circumstances and proportions. [Sir Isaac Newton first formed a distinct *general* concep-

tion of lines of the third order; and afterwards, by great labour and deep penetration, found out and described the particular *species* comprehended under that general term. According to Mr. Hume's theory, he must *first have been acquainted with the particulars*, and then have learned by custom to apply one general name to all of them.]

The author observes, "That the idea of an equilateral triangle of an inch perpendicular, may serve us in talking of a figure, a rectilinear figure, a regular figure, a triangle, and an equilateral triangle."

I answer, The man that uses these general terms, either understands their meaning, or he does not. If he does not understand their meaning, all his talk about them will be found only without sense, and the particular idea mentioned cannot enable him to speak of them with understanding. If he understands the meaning of the general terms, he will find no use for the particular idea.

4. He tells us gravely, "That in a globe of white marble the figure and the colour are indistinguishable, and are in effect the same." How foolish have mankind been to give different names, in all ages and in all languages, to things indistinguishable, and in effect the same? Henceforth in all books of science and of entertainment, we may substitute figure for colour, and colour for figure. By this we shall make numberless curious discoveries, without danger of error.

QUESTIONS FOR EXAMINATION.

Fundamental principle of the ancient sceptics?
How far have the Platonists assented to this opinion?
The Platonic idea may be considered in three different lights?
Opinion of Aristotle?
Nominalists—Realists—Conceptualists?
"Argumentum ad hominem" of Berkeley against Locke valid?
What is understood by the existence of universals?
Universals not objects of imagination?
What distinction overthrows Berkeley's argument against abstract conceptions?
How we conceive being unknown affords no argument?
Locke and Berkeley have divided the truth and error between them?
How does Berkeley concede all that is necessary to abstract conceptions?
What species of abstraction is denied by Berkeley?
This denial appears to be inconsistent with his concessions as well as with experience?
An "argumentum ad hominem" may be employed to refute Berkeley's objection to generalizing?
His reply answered?
The labour of forming abstract ideas inconsiderable?
How does Hume attack abstract general conceptions?
Answer to his first argument?
What are Hume's three arguments to prove the impossibility of conceiving quantity without a precise notion of its *degree*?
What does he substitute in place of abstract general conceptions in reasoning?
This suggestion inadmissible?

ESSAY VI.

OF JUDGMENT.

CHAPTER I.

OF JUDGMENT IN GENERAL.

I. *Advantage of definitions of the operations of the mind.*—JUDGING is an operation of the mind so familiar to every man who hath understanding, and its name is so common and so well understood, that it needs no definition.

As it is impossible by a definition to give a notion of colour to a man who never saw colours; so it is impossible by any definition to give a distinct notion of judgment to a man who has not often judged, and who is not capable of reflecting attentively upon this act of his mind. [The best use of a definition is *to prompt him to that reflection;* and without it the best definition will be apt to mislead him.]

The definition commonly given of judgment, by the more ancient writers in logic, was, that it is an act of the mind, whereby one thing is affirmed or denied of another. I believe this is as good a definition of it as can be given. Why I prefer it to some later definitions, will afterwards appear. Without pretending to give any other, I shall make two remarks upon it, and then offer some general observations on this subject.

II. *Two defects in the logical definition of judgment.*—[1. It is true, that it is by affirmation or denial that we express our judgments; but there may be judgment which is not expressed. It is a solitary act of the mind, and the expression of it by affirmation or denial is not at all essential to it.] It may be tacit, and not expressed. Nay, it is well known that men may judge contrary to what they affirm or deny; the definition, therefore, must be understood of *mental* affirmation or denial, which indeed is only another name for judgment.

[2. Affirmation and denial is very often the expression of testimony, which is a different act of the mind, and ought to be distinguished from judgment.]

A judge asks of a witness what he knows of such a matter to which he was an eye or ear witness. He answers, by affirming or denying something. But his answer does not express his

judgment; it is his testimony. Again, I ask a man his opinion in a matter of science or of criticism. His answer is not testimony; it is the expression of his judgment.

III. *Difference between testimony and judgment.*—[(1) Testimony is a social act, and it is essential to it to *be expressed by words or signs.* A tacit testimony is a contradiction: but there is no contradiction in a tacit judgment; it is complete without being expressed.

(2) In testimony, a man pledges his veracity for what he affirms; so that a false testimony is a lie: but a wrong judgment is not a lie; it is only an error.]

IV. *Not observed in any language.*—I believe, in all languages, testimony and judgment are expressed by the same form of speech. A proposition affirmative or negative, with a verb in what is called the indicative mood, expresses both. [To distinguish them by the form of speech, it would be necessary that verbs should have two indicative moods, one for testimony, and another to express judgment. I know not that this is found in any language. And the reason is, (not surely that the vulgar cannot distinguish the two, for every man knows the difference between a lie and an error of judgment,) but that, from the matter and circumstances, we can easily see whether a man intends to give his testimony, or barely to express his judgment.]

V. *The term judgment analogical.*—[Although men must have judged in many cases before tribunals of justice were erected, yet it is very probable that there were tribunals before men began to *speculate* about judgment, and that the word may be borrowed from the practice of tribunals.] ☞ As a judge, after taking the proper evidence, passes sentence in a cause, and that sentence is called his judgment; so the mind, with regard to whatever is true or false, passes sentence, or determines according to the evidence that appears. Some kinds of evidence leave no room for doubt. Sentence is passed immediately, without seeking or hearing any contrary evidence, because the thing is certain and notorious. In other cases, there is room for weighing evidence on both sides before sentence is passed. The analogy between a tribunal of justice and this inward tribunal of the mind, is too obvious to escape the notice of any man who ever appeared before a judge. And it is probable, that the word *judgment*, as well as many other words we use in speaking of this operation of mind, are grounded on this analogy.

Having premised these things, that it may be clearly understood what I mean by judgment, I proceed to make some general observations concerning it.

First, judgment is an act of the mind specifically different from simple apprehension, or the bare conception of a thing. It

would be unnecessary to observe this, if some philosophers had not been led by their theories to a contrary opinion.

VI. *Judgment different from apprehension.*—[Although there can be no judgment without (1) a conception of the things about which we judge; *yet conception may be without any judgment.*] [(2) Judgment can be expressed by a proposition *only*, and a proposition is a complete sentence; but simple apprehension may be expressed by a word or words, which make no complete sentence.] When simple apprehension is employed about a proposition, every man knows that it is one thing to apprehend a proposition, that is, to conceive what it means; but it is quite another thing to judge it to be true or false.

[(3) It is self-evident, that every judgment must be either true or false; but simple apprehension or conception can neither be true nor false, as was shown before.]

[(4) One judgment may be contradictory to another; and it is impossible for a man to have two judgments at the same time, which he perceives to be contradictory. But contradictory propositions may be *conceived* at the same time without any difficulty. That the sun is greater than the earth, and that the sun is not greater than the earth, are contradictory propositions. He that apprehends the meaning of one, apprehends the meaning of both. But it is impossible for him to judge both to be true at the same time.] He knows that if the one is true, the other must be false. For these reasons, I hold it to be certain, that *judgment and simple apprehension are acts of the mind specifically different.*

Secondly, there are notions or ideas that ought to be referred to the faculty of judgment as their source; because, if we had not that faculty, they could not enter into our minds; and to those that have that faculty, and are capable of reflecting upon its operations, they are obvious and familiar.

Among these we may reckon the notion of judgment itself; the notions of a proposition, of its subject, predicate, and copula; of affirmation and negation, of true and false, of knowledge, belief, disbelief, opinion, assent, evidence. From no source could we acquire these notions, but from reflecting upon our judgments. Relations of things make one great class of our notions or ideas; and we cannot have the idea of any relation without some exercise of judgment, as will appear afterwards.

[*Thirdly*, in persons come to years of understanding, judgment necessarily accompanies all sensation, perception by the senses, consciousness, and memory, but *not conception.*]

I restrict this to persons come to the years of understanding, because it may be a question, whether infants, in the first period of life, have any judgment or belief at all. The same question may be put with regard to brutes and some idiots. This ques-

tion is foreign to the present subject; and I say nothing here about it, but speak only of persons who have the exercise of judgment.

VII. *Many of the operations of the mind are accompanied by judgment.*—In them it is evident, that a man who feels pain, judges and believes that he is really pained. The man who perceives an object, believes that it exists, and is what he distinctly perceives it to be; nor is it in his power to avoid such judgment. And the like may be said of memory, and of consciousness. Whether judgment ought to be called a necessary concomitant of these operations, or rather a part or ingredient of them, I do not dispute; but it is certain, that all of them are accompanied with a determination that something is true or false, and a consequent belief. [If this determination be not judgment, it is an operation that has got no name; for it is not simple apprehension, neither is it reasoning; it is a mental affirmation or negation; it may be expressed by a proposition affirmative or negative, and it is accompanied with the firmest belief. These are the characteristics of judgment; and I must call it judgment, till I can find another name to it.]

VIII. *Our judgments of two kinds.*—[The judgments we form, are (1) either of things necessary, or (2) of things contingent.] That three times three is nine; that the whole is greater than a part; are judgments about things necessary. [Our assent to such necessary propositions is not grounded upon *any* operation of sense, of memory, or of consciousness, nor does it require their concurrence; it is unaccompanied by any other operation *but that of conception*, which must accompany all judgment; we may therefore call this judgment of things necessary, *pure* judgment.] [Our judgment of things contingent must always rest upon *some other operation of the mind*, such as sense, or memory, or consciousness, or credit in testimony, which is itself grounded upon sense.]

That I now write upon a table covered with green cloth, is a contingent event, which I judge to be most undoubtedly true. My judgment is grounded upon my perception, and is a necessary concomitant or ingredient of my perception. That I dined with such a company yesterday, I judge to be true, because I remember it; and my judgment necessarily goes along with this remembrance, or makes a part of it.

☞ There are many forms of speech in common language which show that the senses, memory, and consciousness, are considered as judging faculties. We say that a man judges of colours by his eye, of sounds by his ear. We speak of the evidence of sense, the evidence of memory, the evidence of consciousness. ☞ Evidence is the ground of judgment, and when we see evidence, it is impossible not to judge.

IX. *A common form of speech, or defect of language, has led philosophers into the erroneous opinion that "our faculties do not judge."*—[When we speak of seeing or remembering any thing, we indeed hardly ever add, that we judge it to be true. But the reason of this appears to be, that such an addition would be mere superfluity of speech, because every one knows, that what I see or remember, I must judge to be true, and cannot do otherwise.]

And for the same reason, in speaking of any thing that is self-evident or strictly demonstrated, we do not say that we judge it to be true. This would be superfluity of speech, because every man knows that we must judge that to be true which we hold self-evident or demonstrated.

When you say you saw such a thing, or that you distinctly remember it, or when you say of any proposition that it is self-evident, or strictly demonstrated, it would be ridiculous after this to ask whether you judge it to be true; nor would it be less ridiculous in you to inform us that you do. It would be a superfluity of speech of the same kind as if, not content with saying that you saw such an object, you should add, that you saw it with your eyes.

There is therefore good reason why, in speaking or writing, judgment should not be expressly mentioned, when all men know it to be necessarily implied; that is, when there can be no doubt. In such cases, we barely mention the evidence. But when the evidence mentioned leaves room for doubt, then, without any superfluity or tautology, we say we judge the thing to be so, because this is not implied in what was said before. A woman with child never says, that, going such a journey, she carried her child along with her. We know that, while it is in her womb, she must carry it along with her. There are some operations of mind that may be said to carry judgment in their womb, and can no more leave it behind them than the pregnant woman can leave her child. Therefore, in speaking of such operations, it is not expressed.

[Perhaps this manner of speaking may have led philosophers into the opinion, that in perception by the senses, in memory, and in consciousness, there is no judgment at all. *Because it is not mentioned in speaking of these faculties*, they conclude that it does not accompany them; that they are only different modes of simple apprehension, or of acquiring ideas; and that it is no part of their office to judge.

X. *Locke drew error from the same fountain.*—I apprehend the same cause has led Mr. Locke into a notion of judgment which I take to be peculiar to him. He thinks that the mind has *two* faculties conversant about truth and falsehood. *First*, knowledge; and, *secondly*, judgment. In the first, the percep-

tion of the agreement or disagreement of the ideas is certain. In the second, it is not certain, but probable only.]

According to this notion of judgment, it is not by judgment that I perceive that two and three make five; it is by the faculty of knowledge. I apprehend there can be no knowledge without judgment, though there may be judgment without that certainty which we commonly call knowledge.

Mr. Locke, in another place of his Essay, tells us, "That the notice we have by our senses of the existence of things without us, though not altogether so certain as our intuitive knowledge, or the deductions of our reason about abstract ideas, yet is an assurance that deserves the name of knowledge." I think, by this account of it, and by his definitions before given of knowledge and judgment, it deserves as well the name of *judgment.*

XI. *Definition of judgment.*—That I may avoid disputes about the meaning of words, I wish the reader to understand, that I give the name of judgment to *every determination of the mind concerning what is true or what is false.* This, I think, is what logicians, from the days of Aristotle, have called judgment. Whether it be called one faculty, as I think it has always been, or whether a philosopher chooses to split it into two, seems not very material. And if it be granted, that by our senses, our memory and consciousness, we not only have ideas or simple apprehensions, but form determinations concerning what is true and what is false; whether these determinations ought to be called *knowledge* or *judgment*, is of small moment.

XII. *Philosophers have been unwilling to call the determinations of sense and memory, &c. judgments.*—☞ The judgments grounded upon the evidence of sense, of memory, and of consciousness, put all men upon a level. The philosopher, with regard to these, has no prerogative above the illiterate, or even above the savage.

Their reliance upon the testimony of these faculties is as firm and as well grounded as his. ☞ His superiority is in judgments of another kind; in judgments about things abstract and necessary. And he is unwilling to give the name of judgment to that wherein the most ignorant and unimproved of the species are his equals.

But philosophers have never been able to give any definition of judgment which does not apply to the determinations of our senses, our memory, and consciousness, nor any definition of simple apprehension which can comprehend those determinations.

Our judgments of this kind are purely the gift of nature, nor do they admit of improvement by culture. The memory of one man may be more tenacious than that of another; but both rely with equal assurance upon what they distinctly remember. One man's sight may be more acute, or his feeling more delicate than

that of another; but both give equal credit to the distinct testimony of their sight and touch.

And as we have this belief *by the constitution of our nature*, without any effort of our own, so no effort of ours can overturn it.

The sceptic may perhaps persuade himself in general, that he has no ground to believe his senses or his memory: but, in particular cases that are interesting, his disbelief vanishes, and he finds himself under a necessity of believing both.

XIII. *Judgments of nature.*—[These judgments may, in the strictest sense, be called *judgments of nature*. Nature has subjected us to them whether we will or not. They are neither got, nor can they be lost by any use or abuse of our faculties; and it is evidently necessary for our preservation that it should be so.] For if belief in our senses and in our memory were to be learned by culture, the race of men would perish before they learned this lesson. It is necessary to all men for their being and preservation, and therefore is unconditionally given to all men by the Author of nature.

I acknowledge, that if we were to rest in those judgments of nature of which we now speak, without building others upon them, they would not entitle us to the denomination of reasonable beings. But yet they ought not to be despised, for they are the foundation upon which the grand superstructure of human knowledge must be raised. And as in other superstructures the foundation is commonly overlooked, so it has been in this. The more sublime attainments of the human mind have attracted the attention of philosophers, while they have bestowed but a careless glance upon the humble foundation on which the whole fabric rests.

XIV. *Of the exercise of judgment.*—[A fourth observation is, that some exercise of judgment is necessary (1) in the formation of all abstract and general conceptions, whether more simple or more complex; (2) in dividing, in defining, and (3) in general, in forming all clear and distinct conceptions of things, which are the only fit materials of reasoning.]

[These operations are allied to each other, and therefore I bring them under one observation. They are more allied to our rational nature than those mentioned in the last observation, and therefore are considered by themselves.]

That I may not be mistaken, it may be observed, that I do not say that abstract notions, or other accurate notions of things, after they have been formed, cannot be barely conceived without any exercise of judgment about them. I doubt not that they may; but what I say, is, that, in their formation in the mind at first, there must be some exercise of judgment.

XV. *Judgment necessary in forming abstract and general conceptions, whether the most simple or the more complex.*—[It is

impossible to distinguish the different attributes belonging to the same subject, without judging that they are really different and distinguishable, and that they have that relation to the subject which logicians express, by saying that they may be *predicated* of it. We cannot generalize, without judging that the same attribute does or may belong to many individuals. It has been shown, that our simplest general notions are formed by these two operations of distinguishing and generalizing; judgment therefore is exercised in forming the *simplest* general notions.]

[In those that are *more complex*, and which have been shown to be formed by combining the more simple, there is another act of the judgment required; for such combinations are not made at random, but for an end; and judgment is employed in fitting them to that end. We form complex general notions for conveniency of arranging our thoughts in discourse and reasoning; and therefore, of an infinite number of combinations that might be formed, we *choose* only those that are useful and necessary.]

That judgment must be employed in *dividing* as well as in distinguishing, appears evident. It is one thing to divide a subject properly, another to cut it in pieces. "Hoc non est dividere, sed frangere rem," said Cicero, when he censured an improper division of Epicurus. Reason has discovered rules of division, which have been known to logicians more than two thousand years.

[There are rules likewise of *definition* of no less antiquity and authority. A man may no doubt divide or define properly without attending to the rules, or even without knowing them. But this can only be, when he has *judgment* to perceive that to be right in a particular case, which the rule determines to be right in all cases.]

XVI. *Judgment absolutely necessary in every description of reasoning.*—[I add in general, that, without some degree of judgment, we can form no accurate and distinct notions of things; so that, one province of judgment is, to aid us in forming clear and distinct conceptions of things, which are the only fit materials for reasoning.]

☞ This will probably appear to be a paradox to philosophers who have always considered the formation of ideas of every kind *as belonging to simple apprehension;* and that the sole province of judgment is to put them together in affirmative or negative propositions; and therefore it requires some confirmation.

XVII. *This opinion confirmed.*—[*First,** I think it necessarily follows, from what has been already said in this observation. For if, without some degree of judgment, a man can neither distinguish, nor divide, nor define, nor form *any general notion,* simple

* The second argument will be found in sect. 21 of this chapter.

or complex, he surely, without some degree of judgment, cannot have in his mind the materials necessary to reasoning.]

There cannot be any proposition in language which does not involve *some general conception*. The proposition, *that I exist*, which Des Cartes thought the first of all truths, and the foundation of all knowledge, cannot be conceived without the conception of *existence*, one of the most abstract general conceptions. ☞ A man cannot believe his own existence, or the existence of any thing he sees or remembers, until he has so much judgment as to distinguish things that really exist from things which are only conceived. He sees a man six feet high; he conceives a man sixty feet high; he judges the first object to exist, because he sees it; the second he does not judge to exist, because he only conceives it. Now, I would ask, whether he can attribute existence to the first object, and not to the second, without knowing what existence means? It is impossible.

How early the notion of existence enters into the mind, I cannot determine; but it must certainly be in the mind, as soon as we can affirm of any thing, with understanding, that it exists.

XVIII. *No reasoning without general notions.*—[In every other proposition, (1) the predicate at least must be *a general notion; a predicable* and an *universal* being one and the same. Besides this, every proposition either affirms or denies. And no man can have a distinct conception of a proposition, who does not understand distinctly the meaning of affirming or denying: but (2) these are *very general conceptions*, and, as was before observed, are derived from judgment, as their source and origin.]

I am sensible that a strong objection may be made to this reasoning, and that it may seem to lead to an absurdity, or a contradiction. It may be said, that every judgment is a mental affirmation or negation. If therefore some previous exercise of judgment be necessary to understand what is meant by affirmation or negation, the *exercise of judgment must go before any judgment*, which is absurd.

XIX. *The preceding argument objected to, and the objection answered.*—[In like manner, every judgment may be expressed by a proposition, and a proposition must be conceived before we can judge of it. If therefore we cannot conceive the meaning of a proposition without a previous exercise of judgment, it follows that judgment must be previous to the conception of any proposition, and at the same time that the conception of a proposition must be previous to all judgment, which is a contradiction.]

[The reader may please to observe, that I have limited what I have said to *distinct* conception, and *some degree of judgment;* and it is by this means I hope to avoid this labyrinth of absurdity and contradiction.] The faculties of conception and judgment have an infancy and a maturity as man has. What I have

said is limited to their mature state. I believe in their infant state they are very weak and indistinct; and that, by imperceptible degrees, they grow to maturity, each giving aid to the other, and receiving aid from it. But which of them first began this friendly intercourse, is beyond my ability to determine. It is like the question concerning the bird and the egg.

In the present state of things, it is true that every bird comes from an egg, and every egg from a bird; and each may be said to be previous to the other. But if we go back to the origin of things, there must have been some bird that did not come from any egg, or some egg that did not come from any bird.

In like manner, in the mature state of man, distinct conception of a proposition supposes some previous exercise of judgment, and distinct judgment supposes distinct conception. Each may truly be said to come from the other, as the bird from the egg, and the egg from the bird. But if we trace back this succession to its origin, that is, to the first proposition that was ever conceived by the man, and the first judgment he ever formed, I determine nothing about them, nor do I know in what order, or how they were produced, any more than how the bones grow in the womb of her that is with child.

The first exercise of these faculties of conception and judgment is hid, like the sources of the Nile, in an unknown region.

XX. *The necessity of some degree of judgment to clear and distinct conceptions of things*, may, I think, be *illustrated* by this similitude.

☞ An artist, suppose a carpenter, cannot work in his art without tools, and these tools must be made by art. The exercise of the art therefore is necessary to make the tools, and the tools are necessary to the exercise of the art. There is the same appearance of contradiction, as in what I have advanced concerning the necessity of some degree of judgment, in order to form clear and distinct conceptions of things. These are the tools we must use in judging and in reasoning, and without them must make very bungling work; yet these tools cannot be made without some exercise of judgment.

XXI. *Second argument in confirmation of the opinion stated in sect.* xvi.—[The necessity of some degree of judgment in forming accurate and distinct notions of things will further appear, if we consider attentively what notions we can form, without any aid of judgment, (1) of the objects of sense, (2) of the operations of our own minds, or (3) of the relations of things.]

XXII. *Character or kind of notions formed without any aid of judgment.—The first class.* *—[To begin with the objects of sense. It is acknowledged on all hands, that the first notions we

* Vide sect. 21.

have of sensible objects are got by the external senses only, and probably before judgment is brought forth; *but these first notions are neither simple, nor are they accurate and distinct:*] they are gross and indistinct, and like the *chaos*, a "rudis indigestaque moles." Before we can have any distinct notion of this mass, it must be analysed; the heterogeneous parts must be separated in our conception, and the simple elements, which before lay hid in the common mass, must first be distinguished, and then put together into one whole.

In this way it is that we form distinct notions even of the objects of sense; but this analysis and composition, by habit, becomes so easy, and is performed so readily, that we are apt to overlook it, and to impute the distinct notion we have formed of the object to the senses alone; and this we are the more prone to do, because, when once we have distinguished the sensible qualities of the object from one another, the sense gives testimony to each of them.

☞ You perceive, for instance, an object white, round, and a foot in diameter: I grant that you perceive all these attributes of the object by sense; but if you had not been able to distinguish the colour from the figure, and both from the magnitude, your senses would only have given you one complex and confused notion of all these mingled together.

☞ A man who is able to say with understanding, or to determine in his own mind, that this object is white, must have distinguished whiteness from other attributes. If he has not made this distinction, he does not understand what he says.

☞ Suppose a cube of brass to be presented at the same time to a child of a year old and to a man. The regularity of the figure will attract the attention of both. Both have the senses of sight and of touch in equal perfection; and therefore, if any thing be discovered in this object by the man, which cannot be discovered by the child, it must be owing, not to the senses, but to some other faculty which the child has not yet attained.

First, then, the man can easily distinguish the body from the surface which terminates it; this the child cannot do. *Secondly*, the man can perceive, that this surface is made up of six planes of the same figure and magnitude; the child cannot discover this. *Thirdly*, the man perceives, that each of these planes has four equal sides, and four equal angles; and that the opposite sides of each plane, and the opposite planes are parallel.

XXIII. *Both analysis and synthesis are employed in forming distinct notions by judgment.*—It will surely be allowed, that a man of ordinary judgment may observe all this in a cube which he makes an object of contemplation, and takes time to consider; that he may give the name of a square, to a plane terminated by four equal sides and four equal angles; and the name of a cube,

to a solid terminated by six equal squares; all this is nothing else but analysing the figure of the object presented to his senses into its simplest elements, and again compounding it of those elements.

[By this analysis and composition, two effects are produced. *First,* From the one complex object which his senses presented, though one of the most simple the senses can present, he educes many simple and *distinct notions* of right lines, angles, plain surface, solid, equality, parallelism; notions which the child has not yet faculties to attain. *Secondly,* When he considers the cube as compounded of these elements, put together in a certain *order,* he has then, and not before, a distinct and scientific notion of a cube. The child neither conceives those elements, nor in what order they must be put together, in order to make a cube; and therefore has no accurate notion of a cube, which can make it a subject of reasoning.]

Whence I think we may conclude, that the notion which we have from the senses alone, even of the simplest objects of sense, is indistinct and incapable of being either described or reasoned upon, until it is analyzed into its simple elements, and considered as compounded of those elements.

If we should apply this reasoning to more complex objects of sense, the conclusion would be still more evident. A dog may be taught to turn a jack, but he can never be taught to have a distinct notion of a jack. He sees every part as well as a man; but the relation of the parts to one another, and to the whole, he has not judgment to comprehend.

A distinct notion of an object, even of sense, is never got in an instant; but the sense performs its office in an instant. Time is not required to see it better, but to analyze it, to distinguish the different parts, and their relation to one another, and to the whole.

XXIV. *Practical proof that the senses alone do not afford clear and distinct notions of objects of sense.*—[Hence it is, that when any vehement passion or emotion *hinders the cool application of judgment,* we get no distinct notion of an object, even though the sense be long directed to it. A man who is put into a panic, by thinking he sees a ghost, may stare at it long, without having any distinct notion of it; it is his understanding, and not his sense that is disturbed by his horror.] If he can lay that aside, judgment immediately enters upon its office, and examines the length and breadth, the colour, and figure, and distance of the object. Of these, while his panic lasted, he had no distinct notion, though his eyes were open all the time.

When the eye of sense is open, but that of judgment shut by a panic, or by any violent emotion that engrosses the mind, we

see things confusedly, and probably much in the same manner that brutes and perfect idiots do, and infants before the use of judgment.

There are therefore notions of the objects of sense which are gross and indistinct; and there are others that are distinct and scientific. The former may be got from the senses alone; but the latter cannot be obtained without some degree of judgment.

The clear and accurate notions which geometry presents to us of a point, a right line, an angle, a square, a circle, of ratios direct and inverse, and others of that kind, can find no admittance into a mind that has not some degree of judgment. They are not properly ideas of the senses, nor are they got by compounding ideas of the senses; but, by analysing the ideas or notions we get by the senses into their simplest elements, and again combining these elements into various, accurate, and elegant forms, which the senses never did nor can exhibit.

Had Mr. Hume attended duly to this, it ought to have prevented a very bold attempt, which he has prosecuted through fourteen pages of his "Treatise of Human Nature," to prove that geometry is founded upon ideas that are not exact, and axioms that are not precisely true.

A mathematician might be tempted to think, that the man who seriously undertakes this has no great acquaintance with geometry; but I apprehend it is to be imputed to another cause,—to a zeal for his own system. We see that even men of genius may be drawn into strange paradoxes, by an attachment to a favourite idol of the understanding, when it demands so costly a sacrifice.

XXV. *Hume rejects the evidence of mathematical demonstration.*—We Protestants think, that the devotees of the Roman church pay no small tribute to her authority, when they renounce their five senses in obedience to her decrees. Mr. Hume's devotion to his system carries him even to trample upon mathematical demonstration.

[The fundamental articles of his system are, that all the perceptions of the human mind are either impressions or ideas; and *that ideas are only faint copies of impressions.* The idea of a right line, therefore, is only a faint copy of some line that has been seen, or felt by touch: and the faint copy cannot be more perfect than the original.] Now of such right lines, it is evident, that the axioms of geometry are not precisely true; for two lines that are straight to our sight or touch may include a space, or they may meet in more points than one. If, therefore, we cannot form any notion of a straight line more accurate than that which we have from the senses of sight and touch, geometry has no solid foundation. If, on the other hand, the geometrical axioms are precisely true, the idea of a right line

is not copied from any impression of sight or touch, but must have a different origin, and a more perfect standard.

As the geometrician, by reflecting only upon the extension and figure of matter, forms a set of notions more accurate and scientific than any which the senses exhibit; so the natural philosopher, reflecting upon other attributes of matter, forms another set, such as those of density, quantity of matter, velocity, momentum, fluidity, elasticity, centres of gravity, and of oscillation. These notions are accurate and scientific; but they cannot enter into a mind that has not some degree of judgment, nor can we make them intelligible to children, until they have some ripeness of understanding.

In navigation, the notions of latitude, longitude, course, leeway, cannot be made intelligible to children: and so it is with regard to the terms of every science, and of every art about which we can reason. They have had their five senses as perfect as men, for years before they are capable of distinguishing, comparing, and perceiving the relations of things, so as to be able to form such notions. They acquire the intellectual powers by a slow progress, and by imperceptible degrees, and by means of them learn to form distinct and accurate notions of things, which the senses could never have imparted.

XXVI. *Judgment requisite in forming distinct notions of the operations of the mind.*—[Having said so much of the notions we get from the senses alone of the objects of sense, let us next consider what notions we can have from consciousness alone of the operations of our minds.]

Mr. Locke very properly calls consciousness an internal sense. It gives the like immediate knowledge of things in the mind, that is, of our own thoughts and feelings, as the senses give us of things external. [There is this difference, however, that an external object may be at rest, and the sense may be employed about it for some time. *But the objects of consciousness are never at rest;* the stream of thought flows like a river, without stopping a moment; the whole train of thought passes in succession under the eye of consciousness, which is always employed about the present.] [But is it consciousness that analyses complex operations, distinguishes their different ingredients, and combines them in distinct parcels under general names? This surely is not the work of consciousness, nor can it be performed without reflection, recollecting and judging of what we were conscious of, and distinctly remember.] This reflection does not appear in children. Of all the powers of the mind, it seems to be of the latest growth, whereas consciousness is coeval with the earliest.

Consciousness, being a kind of internal sense, can no more give us distinct and accurate notions of the operations of our minds, than the external senses can give of external objects.

Reflection upon the operations of our minds is the same kind of operation with that by which we form distinct notions of external objects. They differ not in their nature, but in this only, that one is employed about external, and the other about internal objects; and both may, with equal propriety, be called reflection.

XXVII. *Two objections to Locke's definition of reflection, and to the sense in which alone he uses it.*—[Mr. Locke has restricted the word reflection to that which is employed about the operations of our minds, without any authority, as I think, from custom, the arbiter of language: for surely I may reflect upon what I have seen or heard, as well as upon what I have thought. (1) The word, in its proper and common meaning, is equally applicable to objects of sense, and to objects of consciousness. (2) He has likewise confounded reflection with consciousness, and seems not to have been aware that they are different powers, and appear at very different periods of life.]

If that eminent philosopher had been aware of these mistakes about the meaning of the word reflection, he would, I think, have seen, that as it is by reflection upon the operations of our own minds that we can form any distinct and accurate notions of them, and not by consciousness without reflection; so it is by reflection upon the objects of sense, and not by the senses without reflection, that we can form distinct notions of them. Reflection upon any thing, whether external or internal, makes it an object of our intellectual powers, by which we survey it on all sides, and form such judgments about it as appear to be just and true.

I proposed, in the *third* place, to consider our notions of the relations of things: and here I think, that, without judgment, we cannot have any notion of relations.

XXVIII. [There are *two ways in which we get the notion of relations.* The first is, by comparing the related objects, *when we have before had the conception of both.* By this comparison, we perceive the relation, either (1) immediately, or (2) by a process of reasoning.] That my foot is longer than my finger, I perceive immediately; and that three is the half of six. This immediate perception is immediate and intuitive judgment. That the angles at the base of an isosceles triangle are equal, I perceive by a process of reasoning, in which it will be acknowledged there is judgment.

[Another way in which we get the notion of relations (which seems not to have occurred to Mr. Locke) is, when, by attention to one of the related objects, we perceive or judge, that it must, from its nature, have a certain relation to something else, *which before perhaps we never thought of;* and thus our attention to one of the related objects *produces the notion of a correlate*, and of a certain relation between them.]

Thus, when I attend to colour, figure, weight, I cannot help

judging these to be qualities which cannot exist without a subject; that is, something which is coloured, figured, heavy. If I had not perceived such things to be qualities, I should never have had any notion of their subject, or of their relation to it.

XXIX. *Notion of space and its origin.*—By attending to the operations of thinking, memory, reasoning, we perceive or judge, that there must be something which thinks, remembers, and reasons, which we call the mind. When we attend to any change that happens in nature, judgment informs us, that there must be cause of this change, which had power to produce it; and thus we get the notions of cause and effect, and of the relation between them. [When we attend to body, we perceive that it cannot exist without space, hence we get the notion of space, (*which is neither an object of sense nor of consciousness,*) and of the relation which bodies have to a certain portion of unlimited space, as their place.]

XXX. *Ideas of relations not ideas of sensation and reflection, according to Locke.*—I apprehend, therefore, that all our notions of relations may more properly be ascribed to judgment as their source and origin, than to any other power of the mind. [We must first perceive relations by our judgment, before we can conceive them without judging of them; as we must first *perceive* colours by sight, before we can *conceive* them without seeing them.] [I think Mr. Locke, when he comes to speak of the ideas of relations, does not say that they are ideas of sensation or reflection, but only *that they terminate in* and are concerned about ideas of sensation or reflection.]

The notions of unity and number are so abstract, that it is impossible they should enter into the mind until it has some degree of judgment. We see with what difficulty, and how slowly, children learn to use, with understanding, the names even of small numbers, and how they exult in this acquisition when they have attained it. Every number is conceived by the relation which it bears to unity, or to known combinations of units; and upon that account, as well as on account of its abstract nature, all distinct notions of it require some degree of judgment.

In its proper place, I shall have occasion to show, that *judgment* is *an ingredient* in all determinations of *taste;* in all *moral* determinations; and in many of our *passions and affections.* So that this operation, after we come to have any exercise of judgment, mixes with most of the operations of our minds, and, in analysing them, cannot be overlooked without confusion and error.

QUESTIONS FOR EXAMINATION.

What advantage arises from defining the operations of the mind?
Two defects in the logical definition of judgment?
Testimony different from judgment?
Why is not this distinction in language?

From what analogy is the term *judgment* derived?
Judgment differs from apprehension in four points?
Judgment accompanies most of the operations of the mind?
What common defect of language led philosophers into the opinion, "that our faculties do not judge?"
The error of Locke drawn from the same fountain?
Reid's definition of judgment?
Why have philosophers refused to give the name of judgments to the determinations of sense and memory?
Such judgments may be correctly called judgments of nature?
Uses of judgment?
Judgment necessary in abstract and general conceptions, whether simple or complex?
That judgment is necessary in every species of reasoning appears from two arguments?
Objection to the first removed?
By what twofold operation are distinct notions of objects of sense obtained?
Practical proof that the senses by themselves do not afford distinct notions of external objects?
On what pretence does Hume impeach the evidence of geometry?
In what two ways are our notions of relations acquired?
How does it appear that ideas of relations are not claimed as of sensation and reflection by Locke?

CHAPTER II.

OF COMMON SENSE.

I. *Vulgar and philosophical meanings of the term "sense."*—THE word *sense*, in common language, seems to have a different meaning from that which it has in the writings of philosophers; and those different meanings are apt to be confounded, and to occasion embarrassment and error.

[Not to go back to ancient philosophy upon this point, modern philosophers consider sense as a power *that has nothing to do with judgment.* Sense they consider as the *power by which we receive certain ideas or impressions from objects;* and judgment as the power by which we compare those ideas, and perceive their necessary agreements and disagreements.]

The external senses give us the idea of colour, figure, sound, and other qualities of body, primary or secondary. Mr. Locke gave the name of an internal sense to consciousness, because by it we have the ideas of thought, memory, reasoning, and other operations of our own minds. Dr. Hutcheson of Glasgow, conceiving that we have simple and original ideas which cannot be imputed either to the external senses, or to consciousness, introduced other internal senses; such as the sense of harmony, the sense of beauty, and the moral sense. Ancient philosophers also spake of internal senses, of which memory was accounted one.

II. *Hutcheson's definition.*—But all these senses, whether external or internal, have been represented by philosophers, as the means of furnishing our minds with ideas, without including any

kind of judgment. Dr. Hutcheson defines a sense to be [a determination of the mind to receive any idea from the presence of an object independent on our will.]

"By this term (sense) philosophers in general have denominated those faculties, in consequence of which we are liable to feelings relative to ourselves only, and from which they have not pretended to draw any conclusions concerning the nature of things; whereas truth is not relative, but absolute and real." Dr. Priestley's Exam. of Dr. Reid, &c. page 123.

☞ On the contrary, in common language, sense *always implies judgment*. A man of sense is a man of judgment. Good sense is good judgment. Nonsense is what is evidently contrary to right judgment. Common sense is that degree of judgment which is common to men with whom we can converse and transact business.

Seeing and hearing by philosophers are called senses, because we have ideas by them; by the vulgar they are called senses, because we judge by them. We judge of colours by the eye; of sounds by the ear; of beauty and deformity by taste; of right and wrong in conduct, by our moral sense or conscience.

Sometimes philosophers, who represent it as the sole province of sense to furnish us with ideas, fall unawares into the popular opinion, that they are judging faculties. Thus Locke, book 4, chap. xi. ☞ "And of this, (that the quality or accident of colour doth really exist, and hath a being without me,) the greatest assurance I can possibly have, and to which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing."

This popular meaning of the word *sense* is not peculiar to the English language. The corresponding words in Greek, Latin, and I believe in all the European languages, have the same latitude. The Latin words *sentia, sententia, sensa, sensus*, from the last of which the English word *sense* is borrowed, express judgment or opinion, and are applied indifferently to objects of external sense, of taste, of morals, and of the understanding.

III. *Coincidence of the philosophic meanings of the term "judgment."*—I cannot pretend to assign the reason why a word, which is no term of art, which is familiar in common conversation, should have so different a meaning in philosophical writings. [I shall only observe, that the philosophical meaning corresponds perfectly with the account which Mr. Locke and other modern philosophers give of judgment. For if the sole province of the senses, external and internal, be to furnish the mind with the ideas about which we judge and reason, it seems to be a natural consequence, that the sole province of judgment should be to compare those ideas, and to perceive their necessary relations.]

These two opinions seem to be so connected, that one may have been the cause of the other. I apprehend, however, that if both

be true, there is no room left for any knowledge or judgment, either of the real existence of contingent things, or of their contingent relations.

To return to the popular meaning of the word sense. I believe it would be much more difficult to find good authors who never use it in that meaning, than to find such as do.

We may take Mr. Pope as good authority for the meaning of an English word. He uses it often, and in his epistle to the Earl of Burlington, has made a little descant upon it.

"Oft have you hinted to your brother peer,
A certain truth, which many buy too dear;
Something there is more needful than expense,
And something previous e'en to taste,—'tis sense.
Good sense, which only is the gift of Heaven;
And though no science, fairly worth the seven;
A light, which in yourself you must perceive,
Jones and Le Notre have it not to give."

This inward light or sense is given by Heaven to different persons in different degrees. There is a certain degree of it which is neccessary to our being subjects of law and government, capable of managing our own affairs, and answerable for our conduct towards others: this is called common sense, because it is common to all men with whom we can transact business, or call to account for their conduct.

IV. The laws of all civilised nations distinguish those who have this gift of Heaven from those who have it not. The last may have rights which ought not to be violated, but having no understanding in themselves to direct their actions, the laws appoint them to be guided by the understanding of others. It is easily discerned by its effects in men's actions, in their speeches, and even in their looks; and when it is made a question, whether a man has this natural gift or not, a judge or a jury, upon a short conversation with him, can, for the most part, determine the question with great assurance.

The same degree of understanding which makes a man capable of acting with common prudence in the conduct of life, makes him capable of discovering what is true and what is false in matters that are self-evident, and which he distinctly apprehends.

All knowledge, and all science, must be built upon principles that are self-evident; and of such principles, every man who has common sense is a competent judge, when he conceives them distinctly. Hence it is, that disputes very often terminate in an appeal to common sense.

While the parties agree in the first principles on which their arguments are grounded, there is room for reasoning; but when one denies what to the other appears too evident to need, or to admit of proof, reasoning seems to be at an end; an appeal is made to common sense, and each party is left to enjoy his own opinion.

There seems to be no remedy for this, nor any way left to dis-

cuss such appeals, unless the decisions of common sense can be brought into a code, in which all reasonable men shall acquiesce. This indeed, if it be possible, would be very desirable, and would supply a desideratum in logic; and why should it be thought impossible that reasonable men should agree in things that are self-evident?

All that is intended in this chapter, is to explain the meaning of common sense, that it may not be treated, as it has been by some, as a new principle, or as a word without any meaning. I have endeavoured to show, that sense, in its most common, and therefore, its most proper meaning, signifies judgment, though philosophers often use it in another meaning. From this it is natural to think, that common sense should mean common judgment; and so it really does.

What the precise limits are which divide common judgment from what is beyond it on the one hand, and from what falls short of it on the other, may be difficult to determine; and men may agree in the meaning of the word who have different opinions about those limits, or who even never thought of fixing them. This is as intelligible as, that all Englishmen should mean the same thing by the county of York, though perhaps not a hundredth part of them can point out its precise limits.

Indeed, it seems to me, that *common sense* is as unambiguous a word, and as well understood, as the *county of York*. We find it in innumerable places in good writers; we hear it on innumerable occasions in conversation; and, as far as I am able to judge, always in the same meaning. And this is probably the reason why it is so seldom defined or explained.

V. Dr. Johnson, in the authorities he gives, to show that [the word sense signifies understanding, soundness of faculties, strength of natural reason,] quotes Dr. Bentley for what may be called a definition of common sense, though probably not intended for that purpose, but mentioned accidentally: "God hath endowed mankind with power and abilities, which we call natural light and reason, and common sense."

It is true, that common sense is a popular, and not a scholastic word; and by most of those who have treated systematically of the powers of the understanding, it is only occasionally mentioned, as it is by other writers. But I recollect two philosophical writers, who are exceptions to this remark. One is Buffier, who treated largely of common sense, as a principle of knowledge, above fifty years ago. [The other is Bishop Berkeley, who, I think, has laid as much stress upon common sense, in opposition to the doctrines of philosophers, as any philosopher that has come after him.] If the reader chooses to look back to Essay II. Chap. x., he will be satisfied of this, from the quotations there made for another purpose, which it is unnecessary here to repeat.

Men rarely ask what common sense is; because every man believes himself possessed of it, and would take it for an imputation upon his understanding to be thought unacquainted with it. Yet I remember two very eminent authors who have put this question; and it is not improper to hear their sentiments upon a subject so frequently mentioned, and so rarely canvassed.

VI. It is well known, that Lord Shaftesbury gave to one of his treatises the title of "Sensus Communis; an Essay on the Freedom of Wit and Humour, in a letter to a friend;" in which he puts his friend in mind of a free conversation with some of their friends on the subjects of morality and religion. Amidst the different opinions started and maintained with great life and ingenuity, one or other would every now and then take the liberty to appeal to common sense. Every one allowed the appeal; no one would offer to call the authority of the court in question, till a gentleman, whose good understanding was never yet brought in doubt, desired the company very gravely that they would tell him what common sense was.

"If," said he, "by the word *sense*, we were to understand opinion and judgment, and by the word *common*, the generality, or any considerable part of mankind, it would be hard to discover where the subject of common sense could lie; for that which was according to the sense of one part of mankind, was against the sense of another: and if the majority were to determine common sense, it would change as often as men changed. That in religion, common sense was as hard to determine as *catholic* or *orthodox*. What to one was absurdity, to another was demonstration.

"In policy, if plain British or Dutch sense were right, Turkish and French must certainly be wrong. And as mere nonsense, as passive obedience seemed, we found it to be the common sense of a great party amongst ourselves, a greater party in Europe, and perhaps the greatest party of all the world besides. As for morals, the difference was still wider; for even the philosophers could never agree in one and the same system. And some, even of our most admired modern philosophers, had fairly told us, that virtue and vice had no other law or measure than mere fashion and vogue."

This is the substance of the gentleman's speech, which, I apprehend, explains the meaning of the word perfectly, and contains all that has been said, or can be said, against the authority of common sense, and the propriety of appeals to it.

As there is no mention of any answer immediately made to this speech, we might be apt to conclude, that the noble author adopted the sentiments of the intelligent gentleman, whose speech he recites. But the contrary is manifest, from the title of "Sensus Communis" given to his Essay, from his frequent use of the word, and from the whole tenor of the Essay.

The author appears to have a double intention in that Essay, corresponding to the double title prefixed to it. One intention is, to justify the use of wit, humour, and ridicule, in discussing among friends the gravest subjects. "I can very well suppose," says he, "men may be frighted out of their wits; but I have no apprehension they should be laughed out of them. I can hardly imagine, that, in a pleasant way, they should ever be talked out of their love for society, or reasoned out of humanity and common sense."

The other intention, signified by the title "Sensus Communis," is carried on hand in hand with the first, and is to show, that common sense is not so vague and uncertain a thing as it is represented to be in the sceptical speech before recited. "I will try," says he, "what certain knowledge or assurance of things may be recovered in that very way, (to wit, of humour,) by which all certainty, you thought, was lost, and an endless scepticism introduced."

He gives some criticisms upon the word "sensus communis" in Juvenal, Horace, and Seneca; and after showing, in a facetious way throughout the treatise, that the fundamental principles of morals, of politics, of criticism, and of every branch of knowledge, are the dictates of common sense, he sums up the whole in these words: "That some moral and philosophical truths there are so evident in themselves, that it would be easier to imagine half mankind run mad, and joined precisely in the same species of folly, than to admit any thing as truth, which should be advanced against such natural knowledge, fundamental reason, and common sense." And, on taking leave, he adds, "And now, my friend, should you find I had moralised in any tolerable manner according to common sense, and without canting, I should be satisfied with my performance."

VII. Another eminent writer who has put the question what common sense is, is Fenelon, the famous archbishop of Cambray.

That ingenious and pious author, having had an early prepossession in favour of the Cartesian philosophy, made an attempt to establish, on a sure foundation, the metaphysical arguments which Des Cartes had invented to prove the being of the Deity. For this purpose, he begins with the Cartesian doubt. He proceeds to find out the truth of his own existence, and then to examine wherein the evidence and certainty of this and other such primary truths consisted. This, according to Cartesian principles, he places in the clearness and distinctness of the ideas. On the contrary, he places the absurdity of the contrary propositions, in their being repugnant to his clear and distinct ideas.

To illustrate this, he gives various examples of questions manifestly absurd and ridiculous, which every man of common understanding would at first sight perceive to be so, and then goes on to this purpose.

"What is it that makes these questions ridiculous? Wherein does this ridicule precisely consist? It will perhaps be replied, that it consists in this, that they shock common sense. But what is this same common sense? It is not the first notions that all men have equally of the same things. This common sense, which is always and in all places the same; which prevents inquiry; which makes inquiry in some cases ridiculous; which, instead of inquiring, makes a man laugh whether he will or not; which puts it out of a man's power to doubt; this sense, which only waits to be consulted; which shows itself at the first glance, and immediately discovers the evidence or the absurdity of a question; is not this the same that I call my ideas?"

"Behold then those ideas or general notions, which it is not in my power either to contradict or examine, and by which I examine and decide in every case, insomuch that I laugh instead of answering, as often as any thing is proposed to me, which is evidently contrary to what these immutable ideas represent."

I shall only observe upon this passage, that the interpretation it gives of Des Cartes' criterion of truth, whether just or not, is the most intelligible and the most favourable I have met with.

VIII. I beg leave to mention one passage from Cicero, and to add two or three from late writers, which show that this word is not become obsolete, nor has changed its meaning.

De Oratore, lib. 3, § 50. "Omnes enim tacito quodam sensu, sine ulla arte aut ratione, in artibus ac rationibus, recta ac prava dijudicant. Idque cum faciant in picturis, et in signis, et in aliis operibus, ad quorum intelligentiam a naturâ minus habent instrumenti, tum multo ostendunt magis in verborum, numerorum, vocumque judicio; quod ea sint in communibus infixa sensibus; neque earum rerum quemquam funditus natura voluit expertem." ["For every man has within him a certain tacit sense, which enables him to distinguish what is right or wrong in the arts and sciences, and this without instruction or information. If this observation holds good with regard to pictures, statues, and other works, in criticising which they have less assistance from nature, it is much more evident in the judgment they form of words, harmony, and delivery, because this is a judgment implanted in the senses, that are common to all mankind: it is a faculty of which nature never meant any rational creature to be absolutely destitute."]

Hume's Essays and Treatises, vol. i, p. 5. "But a philosopher who proposes only to represent the common sense of mankind in more beautiful and more engaging colours, if by accident he commits a mistake, goes no further, but renewing his appeal to common sense, and the natural sentiments of the mind, returns into the right path, and secures himself from any dangerous illusion."

"Hume's Inquiry concerning the Principles of Morals," p. 2. "Those who have refused the reality of moral distinctions may be ranked among the disingenuous disputants. The only way of converting an antagonist of this kind is to leave him to himself: for, finding that nobody keeps up the controversy with him, it is probable he will at last, of himself, from mere weariness, come over to the side of common sense and reason."

"Priestley's Institutes," Preliminary Essay, vol. i., p. 27. "Because common sense is a sufficient guard against many errors in religion, it seems to have been taken for granted, that that common sense is a sufficient instructor also, whereas in fact, without positive instruction, men would naturally have been mere savages with respect to religion; as, without similar instruction, they would be savages with respect to the arts of life and the sciences. Common sense can only be compared to a judge; but what can a judge do without evidence and proper materials from which to form a judgment?"

"Priestley's Examination of Dr. Reid," &c. p. 127. "But should we, out of complaisance, admit that what has hitherto been called judgment may be called sense, it is making too free with the established signification of words to call it common sense, which, in common acceptation, has long been appropriated to a very different thing, viz., to that capacity for judging of common things that persons of middling capacities are capable of." p. 129. "I should therefore expect, that if a man was so totally deprived of common sense as not to be able to distinguish truth from falsehood in one case, he would be equally incapable of distinguishing it in another."

From this cloud of testimonies, to which hundreds might be added, I apprehend, that whatever censure is thrown upon those who have spoken of common sense as a principle of knowledge, or who have appealed to it in matters that are self-evident, will fall light, when there are so many to share in it. Indeed, the authority of this tribunal is too sacred and venerable, and has prescription too long in its favour to be now wisely called in question. Those who are disposed to do so, may remember the shrewd saying of Mr. Hobbes, "When reason is against a man, a man will be against reason." This is equally applicable to common sense.

From the account I have given of the meaning of this term, it is easy to judge both of the proper use and of the abuse of it.

It is absurd to conceive that there can be any opposition between reason and common sense. It is indeed the first-born of reason, and as they are commonly joined together in speech and in writing, they are inseparable in their nature.

IX. *Twofold office of reason.*—[We ascribe to reason two offices, or two degrees. The first is to judge of things self-evi-

dent; the second to draw conclusions that are not self-evident from those that are. The first of these is the province, and the sole province of common sense; and therefore it coincides with reason in its whole extent, and is only another name for one branch or one degree of reason.] Perhaps it may be said, why then should you give it a particular name, since it is acknowledged to be only a degree of reason? It would be a sufficient answer to this, ☞ Why do you abolish a name which is to be found in the language of all civilized nations, and has acquired a right by prescription? Such an attempt is equally foolish and ineffectual. Every wise man will be apt to think, that a name which is found in all languages as far back as we can trace them, is not without some use.

X. *Three distinctions between reason and common sense.*—[But there is an obvious reason why this degree of reason should have a name appropriated to it; and that is, that (1) in the greatest part of mankind no other degree of reason is to be found.] It is this degree that entitles them to the denomination of reasonable creatures. It is this degree of reason, and this only, that makes a man capable of managing his own affairs, and answerable for his conduct towards others. There is therefore the best reason why it should have a name appropriated to it.

☞ These two degrees of reason differ in other respects, which would be sufficient to entitle them to *distinct* names.

[(2) The first is purely the gift of Heaven. And where Heaven has not given it, no education can supply the want. The second is learned by practice and rules, when the first is not wanting.] A man who has common sense may be taught to reason. But if he has not that gift, no teaching will make him able either to judge of first principles or to reason from them.

[(3) I have only this further to observe, that the province of common sense is more extensive in *refutation* than in confirmation. A conclusion drawn by a train of just reasoning from true principles cannot possibly contradict any decision of common sense, because truth will always be consistent with itself. Neither can such a conclusion receive any confirmation from common sense, because it is not within its jurisdiction.]

But it is possible, that, by setting out from false principles, or by an error in reasoning, a man may be led to a conclusion that contradicts the decisions of common sense. In this case, the conclusion is within the jurisdiction of common sense, though the reasoning on which it was grounded be not; and a man of common sense may fairly reject the conclusion, without being able to show the error of the reasoning that led to it.

Thus, if a mathematician, by a process of intricate demonstration, in which some false step was made, should be brought to this conclusion, that two quantities, which are both equal to

a third, are not equal to each other, a man of common sense without pretending to be a judge of the demonstration, is well entitled to reject the conclusion, and to pronounce it absurd.

QUESTIONS FOR EXAMINATION.

"Sense" has two significations?
The philosophic corresponds with the popular meaning attributed to judgment?
Office of reason twofold?
Reason and common sense differ?

CHAPTER III.

SENTIMENTS OF PHILOSOPHERS CONCERNING JUDGMENT.

I. *Meanings of words should be particularly attended to in the study of pneumatology.*—A DIFFERENCE about the meaning of a word ought not to occasion disputes among philosophers: but it is often very proper to take notice of such differences, in order to prevent verbal disputes. There are, indeed, no words in language more liable to ambiguity than those by which we express the operations of the mind; and the most candid and judicious may sometimes be led into different opinions about their precise meaning.

I hinted before* what I take to be a peculiarity in Mr. Locke with regard to the meaning of the word judgment, and mentioned what I apprehend may have led him into it. But let us hear himself; Essay, Book IV. chap. xiv. "The faculty which God has given to man to supply the want of clear and certain knowledge, where that cannot be had, is judgment; whereby the mind takes its ideas to agree or disagree; or, which is the same, any proposition to be true or false, without perceiving a demonstrative evidence in the proofs. Thus the mind has two faculties, conversant about truth and falsehood. *First,* Knowledge, whereby it certainly perceives, and is undoubtedly satisfied of the agreement or disagreement of any ideas. *Secondly,* Judgment, which is the putting ideas together, or separating them from one another in the mind, when their certain agreement or disagreement is not perceived, but presumed to be so."

II. *The term "knowledge" not always properly applied by Locke.*—[Knowledge, I think, sometimes signifies things known; sometimes that act of the mind by which we know them. And in like manner opinion sometimes signifies things believed; sometimes the act of the mind by which we believe them. *But judgment is the faculty which is exercised in both these acts of the mind.* In knowledge, we judge without doubting; in opinion,

* Essay VI. chap. I, sect. x.

with some mixture of doubt. But I know no authority, besides that of Mr. Locke, for calling knowledge a faculty, any more than for calling opinion a faculty.]

Neither do I think that knowledge is confined within the narrow limits which Mr. Locke assigns to it; because the far greatest part of what all men call human knowledge, is in things which neither admit of intuitive nor of demonstrative proof.

I have all along used the word *judgment* in a more extended sense than Mr. Locke does in the passage above mentioned. I understand by it that operation of mind, by which we determine, concerning any thing that may be expressed by a proposition, whether it be true or false. Every proposition is either true or false; so is every judgment. A proposition may be simply conceived without judging of it. But when there is not only a conception of the proposition, but a mental affirmation or negation, an assent or dissent of the understanding, whether weak or strong, that is judgment.

III. *Locke differs from the ancient philosophers in his narrow application of the term "judgment."*—I think, that since the days of Aristotle, logicians have taken the word in this sense, and other writers, for the most part, though there are other meanings, which there is no danger of confounding with this.

We may take the authority of Dr. Isaac Watts, as a logician, as a man who understood English, and who had a just esteem of Mr. Locke's Essay; ("Logic," Introd. page 5;) "Judgment is that operation of the mind, wherein we join two or more ideas together by one affirmation or negation: that is, we either affirm or deny *this* to be *that*. *So this tree is high; that horse is not swift; the mind of man is a thinking being; mere matter has no thought belonging to it; God is just; good men are often miserable in this world; a righteous governor will make a difference betwixt the evil and the good;* which sentences are the effect of judgment, and are called propositions." And Part II. chap. ii. sect. 9, "The evidence of sense is, when we frame a proposition according to the dictate of any of our senses. So we judge, *that grass is green; that a trumpet gives a pleasant sound; that fire burns wood; water is soft; and iron hard.*"

In this meaning, judgment extends to *every* kind of evidence, probable or certain, and to every degree of assent or dissent. It extends to all knowledge as well as to all opinion; with this difference only, that in knowledge it is more firm and steady, like a house founded upon a rock. In opinion it stands upon a weaker foundation, and is more liable to be shaken and overturned.

These differences about the meaning of words are not mentioned as if truth was on one side, and error on the other, but as an apology for deviating, in this instance, from the phraseology of Mr. Locke, which is for the most part accurate and distinct;

and because attention to the different meanings that are put upon words by different authors, is the best way to prevent our mistaking verbal differences for real differences of opinion.

IV. *Ideas the only objects of the mind in thought, according to Locke.—The common theory concerning ideas* naturally *leads to a theory concerning judgment,* which may be a proper test of its truth; for as they are necessarily connected, they must stand or fall together; their connexion is thus expressed by Mr. Locke, Book IV. chap. i. "Since the mind, in all its thoughts and reasonings, hath no other immediate object but its own ideas, which it alone does, or can contemplate, it is evident that our knowledge is only conversant about them. Knowledge then seems to me to be nothing but the *perception of the connexion and agreement, or disagreement and repugnancy of any of our ideas. In this alone it consists.*"

There can only be one objection to the justice of this inference; and that is, that the antecedent proposition from which it is inferred, seems to have some ambiguity: for, in the first clause of that proposition, the mind is said to have no other *immediate* object but its own ideas; in the second, that it has no other object at all; that it does or can contemplate ideas alone.

If the word *immediate* in the first clause be a mere expletive, and be not intended to limit the generality of the proposition, then the two clauses will be perfectly consistent, the second being only a repetition or explication of the first; and the inference that our knowledge is only conversant about ideas, will be perfectly just and logical.

But if the word *immediate* in the first clause be intended to limit the general proposition, and to imply, that the mind has other objects besides its own ideas, though no other immediate objects; then it will not be true that it does or can contemplate ideas alone; nor will the inference be justly drawn, that our knowledge is only conversant about ideas.

Mr. Locke must either have meant his antecedent proposition, without any limitation by the word *immediate*, or he must have meant to limit it by that word, and to signify that there are objects of the mind which are not ideas.

The first of these suppositions appears to me most probable, for several reasons.

[*First,* because, when he purposely defines the word *idea*, in the introduction to the Essay, he says it is *whatsoever is the object of the understanding when a man thinks;* or whatever the mind can be employed about in thinking. Here there is no room left for objects of the mind that are not ideas.] The same definition is often repeated throughout the Essay. Sometimes, indeed, the word *immediate* is added, as in the passage now under consideration; but there is no intimation made that it ought to be

understood when it is not expressed. Now if it had really been his opinion, that there are objects of thought which are not ideas, this definition, which is the groundwork of the whole Essay, would have been very improper, and apt to mislead his reader.

[*Secondly*, he has never attempted to show how there can be objects of thought which are not immediate objects; and indeed this seems impossible. For whatever the object be, the man either thinks of it, or he does not. There is no medium between these. If he thinks of it, it is an immediate object of thought while he thinks of it. If he does not think of it, it is no object of thought at all.] Every object of thought, therefore, is an immediate object of thought, and the word *immediate*, joined to objects of thought, seems to be a mere expletive.

[*Thirdly*, though Malebranche and Bishop Berkeley believed, that we have no ideas of minds, or of the operations of minds, and that we may think and reason about them without ideas, this was not the opinion of Mr. Locke. He thought that there are ideas of minds, and of their operations, as well as of the objects of sense; that the mind perceives nothing but its own ideas, and that all words are the signs of ideas.]

[A *fourth* reason is, that to suppose that he intended to limit the antecedent proposition by the word *immediate*, is to impute to him a blunder in reasoning, which I do not think Mr. Locke could have committed; for what can be a more glaring paralogism than to infer, that since ideas are partly, though not solely, the objects of thought, it is evident that all our knowledge is *only* conversant about them.] If, on the contrary, he meant that ideas are the only objects of thought, then the conclusion drawn is perfectly just and obvious; and he might very well say, *that since it is ideas only that the mind does or can contemplate, it is evident that our knowledge is only conversant about them.*

☞ As to the conclusion itself, I have only to observe, that though he extends it only to what he calls knowledge, and not to what he calls judgment, there is the same reason for extending it to both.

It is true of judgment, as well as of knowledge, that it can only be conversant about objects of the mind, or about things which the mind can contemplate. Judgment, as well as knowledge, supposes the conception of the object about which we judge; and to judge of objects that never were nor can be objects of the mind, is evidently impossible.

This, therefore, we may take for granted, that if knowledge be conversant about ideas only, because there is no other object of the mind, it must be no less certain, that judgment is conversant about ideas only, for the same reason.

Mr. Locke adds, as the result of his reasoning, knowledge then,

seems to me to be nothing but the perception of the connexion and agreement, or disagreement and repugnancy, of any of our ideas. In this alone it consists.

V. *An inquiry into Locke's definition and explanation of the term knowledge very necessary.*—[This is a very important point, not only on its own account, but on account of its necessary connexion with his system concerning ideas, which is such, as that both must stand or fall together; *for if there is any part of human knowledge which does not consist in the perception of the agreement or disagreement of ideas, it must follow, that there are objects of thought and of contemplation which are not ideas.*]

This point, therefore, deserves to be carefully examined. With this view, let us first attend to its meaning, which I think can hardly be mistaken, though it may need some explication.

Every point of knowledge, and every judgment, is expressed by a proposition, wherein something is affirmed or denied of the subject of the proposition.

VI. *How "the perception of the agreement or disagreement of ideas" is to be understood.*—[By perceiving the connexion or agreement of two ideas, I conceive is meant perceiving the truth of an affirmative proposition, of which the subject and predicate are *ideas*. In like manner, by perceiving the disagreement and repugnancy of any two ideas, I conceive is meant perceiving the truth of a negative proposition, of which both subject and predicate are ideas.] This I take to be the only meaning the words can bear, and it is confirmed by what Mr. Locke says in a passage already quoted in this chapter, that "the mind, taking its ideas to agree or disagree, is the same as taking any proposition to be true or false." Therefore, if the definition of knowledge given by Mr. Locke be a just one, the subject, as well as the predicate of every proposition, by which any point of knowledge is expressed, must be an idea, and can be nothing else; and the same must hold of every proposition by which judgment is expressed, as has been shown above.

VII. *Locke's definition true in a restricted sense.*—Having ascertained the meaning of this definition of human knowledge, we are next to consider how far it is just.

[*First*, I would observe, that if the word (1) *idea* be taken in the meaning which it had at first among the Pythagoreans and Platonists, and if by knowledge be meant only (2) abstract and general knowledge, (which I believe Mr. Locke had chiefly in his view,) I think the proposition is true, that such knowledge consists solely in perceiving the truth of propositions whose subject and predicate are ideas.]

☞ By ideas here I mean things conceived abstractly, without regard to their existence: we commonly call them abstract notions, abstract conceptions, abstract ideas; the Peripatetics

called them universals; and the Platonists, who knew no other ideas, called them ideas without addition.

Such ideas are both subject and predicate in every proposition which expresses abstract knowledge.

The whole body of pure mathematics is an abstract science; and in every mathematical proposition, both subject and predicate are ideas, in the sense above explained. Thus, when I say the side of a square is not commensurable to its diagonal: in this proposition *the side and the diagonal of a square* are the subjects, (for being a relative proposition it must have two subjects.) A square, its side, and its diagonal, are ideas or universals; they are not individuals, but things predicable of many individuals. Existence is not included in their definition, nor in the conception we form of them. The predicate of the proposition is *commensurable,* which must be an universal, as the predicate of every proposition is so. [In other branches of knowledge many abstract truths may be found, but, for the most part, mixed with others that are not abstract.]

VIII. I add, that I apprehend that what is strictly called *demonstrative evidence, is to be found in abstract knowledge only.* This was the opinion of Aristotle, of Plato, and I think of all the ancient philosophers; and I believe in this they judged right. It is true, we often meet with demonstrations in astronomy, in mechanics, and in other branches of natural philosophy; but I believe we shall always find that such demonstrations are grounded upon principles or suppositions, which have neither intuitive nor demonstrative evidence.

Thus when we demonstrate, that the path of a projectile *in vacuo* is a parabola, we suppose that it is acted upon with the same force, and in the same direction through its whole path by gravity. [This is not intuitively known, nor is it demonstrable: and in the demonstration, we reason from the laws of motion, which are principles not capable of demonstration, but grounded on a different kind of evidence.]

Ideas, in the sense above explained, are creatures of the mind; they are fabricated by its rational powers; we know their nature and their essence; for they are nothing more than they are conceived to be; and because they are perfectly known, we can reason about them with the highest degree of evidence.

And as they are not things that exist, but things conceived, they neither have place nor time, *nor are they liable to change.* When we say that they are in the mind, this can mean no more but that they are conceived by the mind, or that they are objects of thought. The act of conceiving them is no doubt in the mind; the things conceived have no place, because they have not existence. Thus, a circle, considered abstractly, is said figuratively to be in the mind of him that conceives it; but in

no other sense than the city of London or the kingdom of France is said to be in his mind when he thinks of those objects.

IX. *Extravagant theory of philosophers as to the duration and presence of ideas.*—[Place and time belong to finite things that exist, but not to things that are barely conceived. They may be objects of conception to intelligent beings *in every place*, and *at all times*. Hence the Pythagoreans and Platonists were led to think that they are eternal and omnipresent. If they had existence, they must be so; for they have no relation to any one place or time, which they have not to every place and to every time.]

[The natural prejudice of mankind, that what we conceive must have existence, led those ancient philosophers to attribute existence to ideas; and by this they were led into all the extravagant and mysterious parts of their system. *When it is purged of these, I apprehend it to be the only intelligible and rational system concerning ideas.*]

I agree with them therefore, (1) *that ideas are immutably the same in all times and places:* for this means no more but that a circle is always a circle, and a square always a square.

I agree with them, (2) *that ideas are the patterns or exemplars, by which every thing was made that had a beginning:* for an intelligent artificer must conceive his work before it is made; he makes it according to that conception; and the thing conceived before it exists, can only be an idea.

I agree with them, (3) *that every species of things considered abstractly is an idea;* and that the idea of the species is in every individual of the species, without division or multiplication. This indeed is expressed somewhat mysteriously, according to the manner of the sect; but it may easily be explained.

Every idea is an attribute; and it is a common way of speaking, to say, that the attribute is in every subject of which it may truly be affirmed. Thus, *to be above fifty years of age*, is an attribute or idea. This attribute may be in, or affirmed of, fifty different individuals, and be the same in all, without division or multiplication.

[I think, that not only every *species*, but every *genus*, higher or lower, and every *attribute* considered abstractly, is an idea. These are things conceived without regard to existence; they are universals, and therefore ideas, according to the ancient meaning of that word.]

X. *The latter Platonists departed from the theory of ideas invented by their leaders.*—[It is true, that, after the Platonists entered into disputes with the Peripatetics, in order to defend the existence of eternal ideas, they found it prudent to contract the line of defence, and maintained only that there is an idea of every *species* of *natural things*, but not of the *genera* nor of

things *artificial.* They were unwilling to multiply beings beyond what was necessary; but *in this I think they departed from the genuine principles of their system.*]

XI. *Genera and attributes to be classed amongst ideas.*—[The definition of a species, is nothing but the definition of the genus, with the addition of a specific difference; and the division of things into *species* is the work of the mind, as well as their division into *genera* and classes. A species, a genus, an order, a class, is only a combination of attributes made by the mind, and called by one name. There is therefore the same reason for giving the name of *idea* to every attribute, and to every species and genus, whether higher or lower:] these are only more complex attributes, or combinations of the more simple. And though it might be improper, without necessity, to multiply beings, which they believed to have a real existence; yet, had they seen that ideas ☞ *are not things that exist*, but things that are conceived, they would have apprehended no danger nor expense from their number.

Simple attributes, species, and genera, lower or higher, are all things conceived without regard to existence; they are universals; they are expressed by general words, and have an equal title to be called by the name of *ideas.*

XII. *Ideas the sole object of demonstrative reasoning.*—[(4) I likewise agree with those ancient philosophers, that *ideas are* the object, and *the sole object* of science, strictly so called; that is, *of demonstrative reasoning.*]

And as ideas are immutable, so their agreements and disagreements, and all their relations and attributes are immutable. All mathematical truths are immutably true. Like the ideas about which they are conversant, they have no relation to time or place, no dependence upon existence or change. That the angles of a plane triangle are equal to two right angles, always was and always will be true, though no triangle had ever existed.

The same may be said of all abstract truths. On that account they have often been called eternal truths. And for the same reason, the Pythagoreans ascribed eternity to the ideas about which they are conversant. [They may very properly be called *necessary* truths; because it is impossible they should not be true *at all times and in all places.*]

Such is the nature of all truth that can be discovered, by perceiving the agreements and disagreements of *ideas*, when we take that word in its primitive sense. And that Mr. Locke, in his definition of knowledge, had chiefly in his view abstract truths, we may be led to think from the examples he gives to illustrate it.

XIII. *Truths that concern real existence cannot be deduced from the consideration of Platonic ideas.*—[But there is another

great class of truths, which are not abstract and necessary, and therefore *cannot be perceived in the agreements and disagreements of ideas.* These are all the truths we know concerning the *real existence* of things; the truth of our own existence; of the existence of other things, inanimate, animal and rational, and of their various attributes and relations.]

XIV. *One truth relative to real existence necessary, not contingent.*—[These truths may be called *contingent* truths. I except only the existence and attributes of the Supreme Being, which is the only necessary truth I know regarding existence.]

All other beings that exist, depend for their existence, and all that belongs to it, *upon the will and power of the First Cause;* therefore, neither their existence, nor their nature, nor anything that befalls them, is necessary, but contingent.

XV. *Signal failure of Locke's explanation of the definition of knowledge.*—[But although the existence of the Deity be necessary, I apprehend *we can only deduce it from contingent truths.* The only arguments for the existence of a Deity which I am able to comprehend, are grounded upon the knowledge of my own existence, and the existence of other finite beings. But these are contingent truths.]

[I believe, therefore, that by perceiving agreements and disagreements of *ideas,* no contingent truth whatsoever can be known, nor the real existence of any thing, not even our own existence, *nor the existence of a Deity, which is a necessary truth.*] Thus I have endeavoured to show what knowledge may, and what cannot be attained, by perceiving the agreements and disagreements of ideas, when we take that word in its *primitive* sense.

We are, in the *next* place, to consider, whether knowledge consists in perceiving the agreement or disagreement of ideas, taking *ideas* in any of the senses in which the word is used by Mr. Locke and other modern philosophers.

1. Very often the word *idea* is used so, that to have the idea of anything is a *periphrasis* for conceiving it. [In this sense, an idea is not an object of thought, it is thought itself. It is the act of the mind by which we conceive any object.] And it is evident that this could not be the meaning which Mr. Locke had in view in his definition of knowledge.

2. A second meaning of the word *idea* is that which Mr. Locke gives in the introduction to his Essay, when he is making an apology for the frequent use of it. "It being that term, I think, which serves best to stand for *whatsoever is the object of the understanding* when a man thinks, or whatever it is which a man can be employed about in thinking."

XVI. *Objects of thought reduced to two classes.*—By this definition, indeed, every thing that can be the object of thought is

an idea. [The *objects of our thoughts* may, I think, be reduced to two classes.

The first class comprehends all those objects which we not only can think of, but which we believe to have a real existence.] Such as the Creator of all things, and all his creatures that fall within our notice. I can think of the sun and moon, the earth and sea, and of the various animal, vegetable, and inanimate productions with which it hath pleased the bountiful Creator to enrich our globe. I can think of myself, of my friends and acquaintance. I think of the author of the Essay with high esteem. These, and such as these, are objects of the understanding which we believe to have real existence.

[A second class of objects of the understanding which a man may be employed about in thinking, are things (1) which we either believe never to have existed, or (2) which we think of without regard to their existence.]

Thus, I can think of Don Quixote, of the island of Laputa, of Oceana, and of Utopia, which I believe never to have existed. Every attribute, every species, and every genus of things, considered abstractly, without any regard to their existence or non-existence, may be an object of the understanding.

To this second class of objects of the understanding, the name of idea does very properly belong, according to the primitive sense of the word, and I have already considered what knowledge does, and what does not consist in perceiving the agreements and disagreements of such ideas.

XVII. *These meanings of the word "idea" were not, most probably, intended by Locke in his definition of knowledge.*—[But if we take the word idea in so extensive a sense as to comprehend, not only the second, but also the first class of objects of the understanding, it will undoubtedly be true, that all knowledge consists in perceiving the agreements and disagreements of ideas. For it is impossible that there can be any knowledge, any judgment, any opinion, true or false, which is not employed about the objects of the understanding.] But whatsoever is an object of the understanding is an idea, according to this second meaning of the word.

[Yet I am persuaded that Mr. Locke, in his definition of knowledge, did not mean that the word *idea* should extend to *all those things* which we commonly consider as objects of the understanding.]

Though Bishop Berkeley believed that sun, moon, and stars, and all material things, are ideas, and nothing but ideas, Mr. Locke nowhere professes this opinion. He believed that we have ideas of bodies, but not that bodies are ideas. In like manner, he believed that we have ideas of minds, but not that minds are ideas. [When he inquired so carefully into the origin of all

our ideas, he did not surely mean to find the origin of whatsoever may be the object of the understanding, nor to resolve the origin of *every thing that may be an object of understanding into sensation and reflection.*]

XVIII. *But he adopts that of the philosophers.*—3. Setting aside, therefore, the two meanings of the word idea before mentioned, as meanings which Mr. Locke could not have in his view in the definition he gives of knowledge, the only meaning that could be intended in this place is that which I before called the philosophical meaning of the word idea, which hath a reference to the theory commonly received about the manner in which the mind perceives external objects, and in which it remembers and conceives objects that are not present to it. It is a very ancient opinion, and has been very generally received among philosophers, that we cannot perceive or think of such objects immediately, but by the medium of certain images or representatives of them really existing in the mind at the time.

To those images the ancients gave the name of species and phantasms. Modern philosophers have given them the name of ideas. [" It is evident," says Mr. Locke, Book IV. chap. iv., " the mind knows not things immediately, but only by the intervention of the ideas it has of them." And in the same paragraph he puts this question: "How shall the mind, when it perceives *nothing but its own ideas*, know that they agree with things themselves ?"]

This theory I have already considered, in treating of perception, of memory, and of conception. The reader will there find the reasons that lead me to think, that it has no solid foundation in reason, or in attentive reflection upon those operations of our minds; that it contradicts the immediate dictates of our natural faculties, which are of higher authority than any theory; that it has taken its rise from the same prejudices which led all the ancient philosophers to think, that the Deity could not make this world without some eternal matter to work upon, and which led the Pythagoreans and Platonists to think, that he could not conceive the plan of the world he was to make without eternal ideas really existing as patterns to work by; and that this theory, when its necessary consequences are fairly pursued, leads to absolute scepticism, though those consequences were not seen by most of the philosophers who have adopted it.

XIX. *Locke could not have believed his theory of ideas to be identical with that of the ancient philosophers.*—I have no intention to repeat what has before been said upon those points; but only, taking ideas in this sense, to make some observations upon the definition which Mr. Locke gives of knowledge.

[*First,* If all knowledge consists in perceiving the agreements and disagreements of ideas, that is, of representative images of

things existing in the mind, it obviously follows, that if there be no such ideas, there can be no knowledge: so that, if there should be found good reason for giving up this philosophical hypothesis, all knowledge must go along with it.]

I hope, however, it is not so; and that though this hypothesis, like many others, should totter and fall to the ground, knowledge will continue to stand firm, upon a more permanent basis.

The cycles and epicycles of the ancient astronomers were for a thousand years thought absolutely necessary to explain the motions of the heavenly bodies. Yet now, when all men believe them to have been mere fictions, astronomy has not fallen with them, but stands upon a more rational foundation than before. Ideas or images of things existing in the mind, have for a longer time been thought necessary for explaining the operations of the understanding. If they should likewise at last be found to be fictions, human knowledge and judgment would suffer nothing, by being disengaged from an unwieldy hypothesis. [Mr. Locke surely did not look upon the existence of ideas as a philosophical hypothesis. He thought that we are conscious of their existence, otherwise he would not have made the existence of all our knowledge to depend upon the existence of ideas.]

[*Secondly*, Supposing this hypothesis to be *true*, I agree with Mr. Locke, that it is an evident and necessary consequence that our knowledge can be conversant about *ideas only*, and must consist in perceiving their attributes and relations.] For nothing can be more evident than this, that all knowledge, and all judgment and opinion, must be about things which are or may be immediate objects of our thought. What cannot be the object of thought, or the object of the mind in thinking, cannot be the object of knowledge or of opinion.

Every thing we can know of any object must be either some attribute of the object, or some relation it bears to some other object or objects. By the agreements and disagreements of objects, I apprehend Mr. Locke intended to express both their *attributes and their relations*. If ideas then be the only objects of thought, the consequence is necessary, that they must be the only objects of knowledge, and all knowledge must consist in perceiving their agreements and disagreements, that is, their attributes and relations.

XX. *Ideas not the only objects of our thoughts.*—The use I would make of this consequence, is to show that the hypothesis must be false, from which it necessarily follows: [for if we have any knowledge of things *that are not ideas*, it will follow no less evidently, that ideas are not the *only* objects of our thoughts.]

XXI. *Locke's own writings the best refutation of his theory that "idea is the sole object of thinking."*—Mr. Locke has pointed out the extent and limits of human knowledge in his fourth

book, with more accuracy and judgment than any philosopher had done before; but he has not confined it to the agreements and disagreements of ideas. And I cannot help thinking, that a great part of that book is an evident refutation of the principles laid down in the beginning of it.

XXII. *Consequences of such a theory.*—Mr. Locke did not believe that he himself was an idea; that his friends and acquaintance were ideas; that the Supreme Being, to speak with reverence, is an idea; or that the sun and moon, the earth and the sea, and other external objects of sense, are ideas. [He believed that he had some certain knowledge of all those objects. His knowledge, therefore, did not consist solely in perceiving the agreements and disagreements of his ideas:] for, surely, to perceive the existence, the attributes, and relations of things, which are not ideas, is not to perceive the agreements and disagreements of ideas. And if things which are not ideas be objects of knowledge, they must be objects of thought. [On the contrary, if ideas be the only objects of thought, there can be no knowledge (1) either of our own existence, (2) or of the existence of external objects, (3) or of the existence of a Deity.]

XXIII. *The theory of Locke partially rejected by Berkeley.*—[This consequence, as far as concerns the existence of *external objects of sense*, was afterwards deduced from the theory of ideas by Bishop Berkeley with the clearest evidence; and that author chose rather to adopt the consequence than to reject the theory on which it was grounded. But, with regard to the existence of our own minds, of other minds, and of a Supreme Mind, the Bishop, that he might avoid the consequence, rejected a part of the theory, and maintained, that we can think of minds, of their attributes and relations, without ideas.]

Mr. Hume saw very clearly the consequences of this theory, and adopted them in his speculative moments; but candidly acknowledges, that, in the common business of life, he found himself under a necessity of believing with the vulgar. His "Treatise of Human Nature" is the only system to which the theory of ideas leads; and, in my apprehension, is, in all its parts, the necessary consequence of that theory.

Mr. Locke, however, did not see all the consequences of that theory; he adopted it without doubt or examination, carried along by the stream of philosophers that went before him; and his judgment and good sense have led him to say many things, and to believe many things that cannot be reconciled to it.

XXIV. He not only believed his own existence, the existence of external things, and the existence of a Deity; but he has shown very justly how we come by the knowledge of these existences.

It might here be expected, that he should have pointed out

the agreements and disagreements of ideas from which these existences are deduced; but this is impossible, and he has not even attempted it.

[(1) *Our own existence*, he observes, *we know intuitively;* but this intuition is not a perception of the agreement or disagreement of ideas; for the subject of the proposition, *I exist*, is not an idea, but a person.]

[(2) The knowledge of *external objects of sense*, he observes, *we can have only by sensation. This sensation* he afterwards expresses more clearly by *the testimony of our senses, which are the proper and sole judges of this thing;* whose testimony *is the greatest assurance we can possibly have, and to which our faculties can attain.* This is perfectly agreeable to the common sense of mankind, and is perfectly understood by those who never heard of the theory of ideas.] Our senses testify immediately the existence, and many of the attributes and relations of external material beings; and, by our constitution, we rely with assurance upon their testimony, without seeking a reason for doing so. [This assurance, Mr. Locke acknowledges, deserves the name of knowledge. *But those external things are not ideas,* nor are their attributes and relations the agreements and disagreements of ideas, but the agreements and disagreements of things which are not ideas.]

XXV. *Locke endeavours to reconcile our knowledge of external objects with his theory of ideas.*—[To reconcile this to the theory of ideas, Mr. Locke says, *That it is the actual receiving of ideas from without that gives us notice of the existence of those external things.*

This, if understood literally, would lead us back to the doctrine of Aristotle, that our ideas or species come from without from the external objects, and are the image or form of those objects. But Mr. Locke, I believe, meant no more by it, but that our ideas of sense must have a cause, and that we are not the cause of them ourselves.]

Bishop Berkeley acknowledges all this, and shows very clearly, that it does not afford the least shadow of reason for the belief of any material object. Nay, that there can be nothing external that has any resemblance to our ideas but the ideas of other minds.

It is evident, therefore, that the agreements and disagreements of ideas can give us no knowledge of the *existence of any material thing.* If any knowledge can be attained of things which are not ideas, that knowledge is a perception of agreements and disagreements, not of ideas, but of things that are not ideas.

XXVI. *Our knowledge of the existence of a Deity cannot be reconciled with this theory.*—[(3) As to *the existence of a Deity,* though Mr. Locke was aware that Des Cartes, and many after

him, had attempted to prove it merely from the agreements and disagreements of ideas; yet "he thought it an ill way of establishing that truth, and silencing atheists, to lay the whole stress of so important a point upon that sole foundation."] And therefore he proves this point with great strength and solidity, from *our* own existence, and the existence of the *sensible parts* of the universe. [(4) By memory, Mr. Locke says, we have the knowledge of the past existence of several things: but all conception of past existence, as well as of external existence, is irreconcileable to the theory of ideas; because it supposes that there may be immediate objects of thought, which are not ideas presently existing in the mind.]

[I conclude therefore, that if we have any (1) knowledge of our own existence, or of (2) the existence of what we see about us, or of (3) the existence of a Supreme Being; or if we have any (4) knowledge of things past by memory, *that knowledge cannot consist in perceiving the agreements and disagreements of ideas.*]

XXV. [This *conclusion,* indeed, is evident of itself: for if knowledge consists solely in the perception of the agreement or disagreement of ideas, there can be no knowledge of any proposition which does not express some agreement or disagreement of ideas; consequently there can be no knowledge of any proposition, which expresses either the existence, or the attributes or relations of things, which are not ideas. If therefore the theory of ideas be true, there can be no knowledge of anything but of ideas. And, on the other hand, if we have any knowledge of any thing besides ideas, that theory must be false.]

There can be no knowledge, no judgment, or opinion about things which are not immediate objects of thought. This I take to be self-evident. If, therefore, ideas be the only immediate objects of thought, they must be the only things in nature of which we can have any knowledge, and about which we can have any judgment or opinion.

XXVI. *This conclusion not foreseen by Locke.*—This necessary consequence of the common doctrine of ideas Mr. Hume saw, and has made evident in his "Treatise of Human Nature;" but the use he made of it was not to overturn the theory with which it is necessarily connected, but to overturn all knowledge, and to leave no ground to believe anything whatsoever. If Mr. Locke had seen this consequence, there is reason to think that he would have made another use of it.

[That a man of Mr. Locke's judgment and penetration did not perceive a consequence so evident, seems indeed very strange; and I know no other account that can be given of it but this, that *the ambiguity of the word idea* has misled him in this, as in several other instances.] Having at first defined ideas to

be (1) whatsoever is the object of the understanding when we think, he takes it very often in that unlimited sense; and so every thing that can be an object of thought is an idea. At other times, he uses the word to signify (2) certain representative images of things in the mind, which philosophers have supposed to be immediate objects of thought. At other times, (3) things conceived abstractly, without regard to their existence, are called ideas. [Philosophy is much indebted to Mr. Locke for his observations on the abuse of words. It is pity he did not apply these observations to the word *idea*, the ambiguity and abuse of which has very much hurt his excellent Essay.]

There are some other opinions of philosophers, concerning judgment, of which I think it unnecessary to say much.

☞ Mr. Hume sometimes adopts Mr. Locke's opinion, that it is the perception of the agreement or disagreement of our ideas; sometimes he maintains, that judgment and reasoning resolve themselves into conception, and are nothing but particular ways of conceiving objects; and he says, that an opinion or belief may most accurately be defined, *a lively idea related to or associated with a present impression.* "Treatise of Human Nature," vol. i. page 172.

I have endeavoured before, in the first chapter of this Essay, to show that judgment is an operation of mind specifically distinct from the bare conception of an object. I have also considered his notion of belief, in treating of the theories concerning memory.

Dr. Hartley says, "That assent and dissent must come under the notion of ideas, being only those very complex internal feelings which adhere by association to such clusters of words as are called propositions in general, or affirmations and negations in particular."

This, if I understand its meaning, agrees with the opinion of Mr. Hume above mentioned, and has therefore been before considered.

XXVII. [*Dr. Priestley* has given another *definition of judgment.* "It is nothing more than the perception of the universal concurrence, or the perfect coincidence of two ideas; or the want of that concurrence or coincidence."] This I think coincides with Mr. Locke's definition, and therefore has been already considered.

There are many particulars which deserve to be known, and which might very properly be considered in this Essay on judgment; concerning the various kinds of propositions by which our judgments are expressed; their subjects and predicates; their conversions and oppositions: but as these are to be found in every system of logic from Aristotle down to the present age, I think it unnecessary to swell this Essay with the repetition of

what has been said so often. The remarks which have occurred to me upon what is commonly said on these points, as well as upon the art of syllogism; the utility of the school logic, and the improvements that may be made in it, may be found in "A Short Account of Aristotle's Logic with Remarks,"* which Lord Kames has honoured with a place in his "Sketches of the History of Man."

QUESTIONS FOR EXAMINATION.

The term *knowledge* not correctly employed by Locke?
Ideas the *only* objects of thought according to the same philosopher?
An examination of Locke's explanation of the word "*knowledge*" why necessary?
What is understood by the perception of the agreement or disagreement of ideas?
How far is Locke's definition true?
In what kind of knowledge only have we demonstrative knowledge?
Why did the Platonists suppose ideas to be eternal and omnipresent?
How did the latter Platonists depart from the Peripatetic principle as to ideas?
Genera and attributes why entitled to be placed amongst ideas?
What truths cannot be deduced from the consideration of Platonic ideas?
A knowledge of the existence of a Deity not derived from those ideas?
Objects of thought reduced to two classes?
Four meanings of the term "idea"?
The three first how understood by Locke in his definition of knowledge?
Locke appears to have adopted the philosophic theory of ideas?
He did not view it as the invention of philosophers?
How does Reid show that ideas are not the *only* objects of thought?
Locke's own admirable treatise the best refutation of the error he fell into?
What consequences of this opinion were anticipated?
Some part of the theory rejected by Berkeley?
How does Locke reconcile the knowledge of external objects of sense with the theory of ideas?
How does Locke desire the words "the actual receiving ideas from without" to be understood?
Can the knowledge of the existence of a Supreme Being be reconciled with the theory of ideas?
Character of the conclusion?
Why did not Locke anticipate this conclusion?
Priestley's definition of judgment?

CHAPTER IV.

OF FIRST PRINCIPLES IN GENERAL.

I. ***Division of our judgments.***—[ONE of the most important distinctions of our judgments is, that some of them are *intuitive, others grounded on argument.*]

It is not in our power to judge as we will. The judgment is carried along necessarily by the evidence, real or seeming, which

* It is included in this edition of the author's works.

appears to us at the time. But in propositions that are submitted to our judgment there is this great difference; some are of such a nature that a man of ripe understanding may apprehend them distinctly, and perfectly understand their meaning without finding himself under any necessity of believing them to be true or false, probable or improbable. The judgment remains in suspense, until it is inclined to one side or another by reasons or arguments.

But there are other propositions which are no sooner understood than they are believed. The judgment follows the apprehension of them necessarily, and both are equally the work of nature, and the result of our original powers. There is no searching for evidence, no weighing of arguments; the proposition is not deduced or inferred from another; it has the light of truth in itself, and has no occasion to borrow it from another.

☞ Propositions of the last kind, when they are used *in matters of science*, have commonly been called *axioms;* and on whatever occasion they are used, are called *first principles, principles of common sense, common notions, self-evident truths.* Cicero calls them "Naturæ judicia, judicia communibus hominum sensibus infixa." Lord Shaftesbury expresses them by the words, *natural knowledge, fundamental reason,* and *common sense.*

What has been said, I think, is sufficient to distinguish first principles, or intuitive judgments, from those which may be ascribed to the power of reasoning; nor is it a just objection against this distinction, that there may be some judgments concerning which we may be dubious to which class they ought to be referred. There is a real distinction between persons within the house, and those that are without; yet it may be dubious to which the man belongs that stands upon the threshold.

The power of reasoning, that is, of drawing a conclusion from a chain of premises, may with some propriety be called an art. "All reasoning," says Mr. Locke, "is search and casting about, and requires pains and application." It resembles the power of walking, which is acquired by use and exercise. Nature prompts to it, and has given the power of acquiring it; but must be aided by frequent exercise before we are able to walk. After repeated efforts, much stumbling, and many falls, we learn to walk; and it is in a similar manner that we learn to reason.

II. *Two requisites to intuitive judgment.*—But the power of judging in self-evident propositions, which are clearly understood, may be compared to the power of swallowing our food. It is purely natural, and therefore common to the learned, and the unlearned; to the trained and the untrained: [it requires (1) ripeness of understanding, and (2) freedom from prejudice, but nothing else.]

I take it for granted, that *there are* self-evident principles. Nobody, I think, denies it. And if any man were so sceptical as to deny that there is any proposition that is self-evident, I see not how it would be possible to convince him by reasoning.

But yet there seems to be great difference of opinions among philosophers, about first principles. What one takes to be self-evident, another labours to prove by arguments, and a third denies altogether.

III. *The abuse of first principles by the ancients led moderns to doubt their evidence.*—Thus, before the time of Des Cartes, it was taken for a first principle, that there is a sun and a moon, an earth and sea, which really exist, whether we think of them or not. Des Cartes thought that the existence of those things ought to be proved by argument; and in this he has been followed by Malebranche, Arnauld, and Locke. They have all laboured to prove, by very weak reasoning, the existence of external objects of sense; and Berkeley and Hume, sensible of the weakness of their arguments, have been led to deny their existence altogether.

[The ancient philosophers granted, that all knowledge must be grounded on first principles, and that there is no reasoning without them.* The Peripatetic philosophy was redundant rather than deficient in first principles. Perhaps *the abuse of them in that ancient system may have brought them into discredit in modern times;*] for as the best things may be abused, so that abuse is apt to give a disgust to the thing itself; and as one extreme often leads into the opposite, this seems to have been the case in the respect paid to first principles in ancient and in modern times.

IV. *Philosophers have fallen into two opposite extremes with respect to first principles.*—[Des Cartes thought one principle, expressed in one word "cogito," a sufficient foundation for his whole system, and asked no more.

Mr. Locke seems to think first principles of very small use. Knowledge consisting, according to him, in the perception of the agreement or disagreement of our ideas: when we have clear ideas, and are able to compare them together, we may always fabricate first principles as often as we have occasion for them. Such differences we find among philosophers about first principles.]

It is likewise a question of some moment, whether the differences among men about first principles can be brought to any issue. When, in disputes, one man maintains that to be a first

* Four things may be observed touching first principles :—(1) That all knowledge, derived from reason, is founded on them. (2) Some afford certain, others only probable, conclusions. (3) Their enumeration would give stability to human knowledge. (4) Men may agree, although they differ concerning them.

principle, which another denies, commonly both parties appeal to common sense, and so the matter rests. Now, is there no way of discussing this appeal? Is there no mark or criterion, whereby first principles that are truly such, may be distinguished from those that assume the character without a just title? I shall humbly offer in the following propositions what appears to me to be agreeable to truth in these matters, always ready to change my opinion upon conviction.

V. [1. *First,* I hold it to be certain, and even demonstrable, that *all knowledge got by reasoning must be built upon first principles.*]

This is as certain as that every house must have a foundation. The power of reasoning, in this respect, resembles the mechanical powers or engines; it must have a fixed point to rest upon, otherwise it spends its force in the air, and produces no effect.

When we examine, in the way of analysis, the evidence of any proposition, either we find it self-evident, or it rests upon one or more propositions that support it. The same thing may be said of the propositions that support it; and of those that support them, as far back as we can go. But we cannot go back in this track to infinity. Where then must this analysis stop? It is evident that it must stop only when we come to propositions, which support all that are built upon them, but are themselves supported by none, that is, to self-evident propositions.

Let us again consider a synthetical proof of any kind, where we begin with the premises, and pursue a train of consequences, until we come to the last conclusion, or thing to be proved. Here we must begin, either with self-evident propositions, or with such as have been already proved. When the last is the case, the proof of the propositions, thus assumed, is a part of our proof; and the proof is deficient without it. Suppose then the deficiency supplied, and the proof completed, is it not evident that it must set out with self-evident propositions, and that the whole evidence must rest upon them? [So that it appears to be demonstrable that, without first principles, *analytical reasoning could have no end, and synthetical reasoning could have no beginning;* and that every conclusion got by reasoning must rest with its whole weight upon first principles, as the building does upon its foundation.]

VI. [2. A *second* proposition is, that *some first principles yield conclusions that are certain, others such as are probable,* in various degrees, from the highest probability to the lowest.]

In just reasoning, the strength or weakness of the conclusion will always correspond to that of the principles on which it is grounded.

In a matter of testimony, it is self-evident, that the testimony of two is better than that of one, supposing them equal in character, and in their means of knowledge; ☞ yet the single

testimony may be true, and that which is preferred to it may be false.

☞ When an experiment has succeeded in several trials, and the circumstances have been marked with care, there is a self-evident probability of its succeeding in a new trial; but there is no certainty. The probability, in some cases, is much greater than in others; because, in some cases, it is much easier to observe all the circumstances that may have influence upon the event than in others. And it is possible, that, after many experiments made with care, our expectation may be frustrated in a succeeding one, by the variation of some circumstance that has not, or perhaps could not be observed.

Sir Isaac Newton has laid it down as a first principle in natural philosophy, that a property which has been found in all bodies upon which we have had access to make experiments, and which has always been found in its quantity to be in exact proportion to the quantity of matter in every body, is to be held as an universal property of matter.

This principle, as far as I know, has never been called in question. The evidence we have, that all matter is divisible, moveable, solid, and inert, is resolveable into this principle; and if it be not true, we cannot have any rational conviction that all matter has those properties. From the same principle that great man has shown, that we have reason to conclude, that all bodies gravitate towards each other.

VII. *Mathematical axioms differ from the first principles of philosophers.*—[This principle, however, has not that kind of evidence which mathematical axioms have. It is not a necessary truth whose contrary is impossible; nor did Sir Isaac ever conceive it to be such. And if it should ever be found, by just experiments, that there is any part in the composition of some bodies which has not gravity, the fact, if duly ascertained, *must be admitted as an exception* to the general law of gravitation.]

In games of chance, it is a first principle, that every side of a die has an equal chance to be turned up; and that, in a lottery, every ticket has an equal chance of being drawn out. From such first principles as these, which are the best we can have in such matters, we may deduce, by demonstrative reasoning, the precise degree of probability of every event in such games.

But the principles of all this accurate and profound reasoning can never yield a certain conclusion, it being impossible to supply a defect in the first principles by any accuracy in the reasoning that is grounded upon them. As water, by its gravity, can rise no higher in its course than the fountain, however artfully it be conducted; so no conclusion of reasoning can have a greater degree of evidence than the first principles from which it is drawn.

VIII. *First principles necessary to probability.*—[From these instances, it is evident, that as there are some first principles that yield conclusions of absolute certainty; so there are others that can only yield probable conclusions; and that the *lowest degree of probability* must be grounded on first principles as well as absolute certainty.]

IX. *Their enumeration would contribute to the advancement of knowledge.*—[3. A *third* proposition is, that it would contribute greatly to the stability of human knowledge, and consequently to the improvement of it, if the first principles upon which the various parts of it are grounded were pointed out and ascertained.]

☞ We have ground to think so, both from facts, and from the nature of the thing.

(1) There are two branches of human knowledge in which this method has been followed, to wit, mathematics and natural philosophy: in mathematics, as far back as we have books. It is in this science only, that, for more than two thousand years since it began to be cultivated, we find no sects, no contrary systems, and hardly any disputes; or, if there have been disputes, they have ended as soon as the animosity of parties subsided, and have never been again revived. The science, once firmly established upon the foundation of a few axioms and definitions, as upon a rock, has grown from age to age, so as to become the loftiest and the most solid fabric that human reason can boast.

Natural philosophy, till less than two hundred years ago, remained in the same fluctuating state with the other sciences. Every new system pulled up the old by the roots. The system-builders, indeed, were always willing to accept of the aid of first principles, when they were of their side; but finding them insufficient to support the fabric which their imagination had raised, they were only brought in as auxiliaries, and so intermixed with conjectures, and with lame inductions, that their systems were like Nebuchadnezzar's image, whose feet were partly of iron and partly of clay.

Lord Bacon first delineated the only solid foundation on which natural philosophy can be built: and Sir Isaac Newton reduced the principles laid down by Bacon into three or four axioms, which he calls regulæ philosophandi. From these, together with the phenomena observed by the senses, which he likewise lays down as first principles, he deduces, by strict reasoning, the propositions contained in the third book of his "Principia," and in his "Optics;" and by this means has raised a fabric in those two branches of natural philosophy, which is not liable to be shaken by doubtful disputation, but stands immoveable upon the basis of self-evident principles.

This fabric has been carried on by the accession of new discoveries; but is no more subject to revolutions.

The disputes about materia prima, substantial forms, nature's abhorring a vacuum, and bodies having no gravitation in their proper place, are now no more. The builders in this work are not put to the necessity of holding a weapon in one hand while they build with the other; their whole employment is to carry on the work.

Yet it seems to be very probable, that if natural philosophy had not been reared upon this solid foundation of self-evident principles, it would have been to this day a field of battle, wherein every inch of ground would have been disputed, and nothing fixed and determined.

X. *Mathematics possesses an advantage over other sciences.*—[I acknowledge that mathematics and natural philosophy, especially the former, have this advantage of most other sciences, *that it is less difficult to form distinct and determinate conceptions of the objects about which they are employed;*] but as this difficulty is not insuperable, it affords a good reason, indeed, why other sciences should have a longer infancy; but no reason at all why they may not at last arrive at maturity, by the same steps as those of quicker growth.

The facts I have mentioned may therefore lead us to conclude, that if in other branches of philosophy the first principles were laid down, as has been done in mathematics and natural philosophy, and the subsequent conclusions grounded upon them, this would make it much more easy to distinguish what is solid and well supported from the vain fictions of human fancy.

XI. *Advantage of building a system upon first principles.*—(2) * But laying aside facts, the nature of the thing leads to the same conclusion.

For when any system is grounded upon first principles, and deduced regularly from them, we have a thread to lead us through the labyrinth. The judgment has a distinct and determinate object. The heterogeneous parts being separated, can be examined each by itself.

[The whole system is reduced to *axioms, definitions,* and *deductions.*] These are materials of very different nature, and to be measured by a very different standard; and it is much more easy to judge of each, taken by itself, than to judge of a mass wherein they are kneaded together without distinction. Let us consider how we judge of each of them.

XII. *Use of definitions.*—[*First,* As to definitions, the matter is very easy. They relate only to words, and differences about them may produce different ways of *speaking,* but can never produce different ways of *thinking,* while every man keeps to his own definitions.]

But as there is not a more plentiful source of fallacies in rea-

* Vide Essay IV. chap. ii. sect. iv.

soning than men's using the same word sometimes in one sense and at other times in another, ☞ the best means of preventing such fallacies, or of detecting them when they are committed, is definitions of words as accurate as can be given.

[*Secondly*, As to deductions drawn from principles granted on both sides, I do not see how they can long be a matter of dispute among men who are not blinded by prejudice or partiality:] for the rules of reasoning by which inferences may be drawn from premises have been for two thousand years fixed with great unanimity. No man pretends to dispute the rules of reasoning laid down by Aristotle, and repeated by every writer in dialectics.

And we may observe by the way, that the reason why Logicians have been so unanimous in determining the rules of reasoning, from Aristotle down to this day, seems to be, that they were by that great genius raised, in a scientific manner, from a few definitions and axioms. It may further be observed, that when men differ about a deduction, whether it follows from certain premises, this I think is always owing to their differing about *some first principle.* I shall explain this by an example.

☞ Suppose that, from a thing having begun to exist, one man infers that it must have had a cause; another man does not admit the inference. Here it is evident, that the first takes it for a self-evident principle, that every thing which begins to exist must have a cause. The other does not allow this to be self-evident. Let them settle this point, and the dispute will be at an end.

Thus I think it appears, that in matters of science, if the terms be properly explained, the first principles upon which the reasoning is grounded be laid down and exposed to examination, and the conclusions regularly deduced from them, it might be expected, that men of candour and capacity, who love truth, and have patience to examine things coolly, might come to unanimity with regard to the force of the deductions, and that their differences might be reduced to those they may have about first principles.

XIII. [4. A *fourth** proposition is, that nature hath *not* left us destitute of means whereby the candid and honest part of mankind may be brought to unanimity when they happen to differ about first principles.]

When men differ about things that are taken to be first principles or self-evident truths, reasoning seems to be at an end. Each party appeals to common sense. When one man's common sense gives one determination, another man's a contrary determination, there seems to be no remedy but to leave every

* Vide Sect. iii., p. 405, note.

man to enjoy his own opinion. This is a common observation, and I believe a just one, if it be rightly understood.

It is in vain to reason with a man who denies the first principles on which the reasoning is grounded. Thus, it would be in vain to attempt the proof of a proposition in Euclid to a man who denies the axioms. Indeed, we ought never to reason with men who deny first principles from obstinacy and unwillingness to yield to reason.

But is it not possible, that men who really love truth, and are open to conviction, may differ about first principles?

I think it is possible, and that it cannot, without great want of charity, be denied to be possible.

When this happens, every man who believes that there is a real distinction between truth and error, and that the faculties which God has given us are not in their nature fallacious, must be convinced that there is a defect, or a perversion of judgment on the one side or the other.

A man of candour and humility will, in such a case, very naturally suspect his own judgment, so far as to be desirous to enter into a serious examination, even of what he has long held as a first principle. He will think it not impossible, that although his heart be upright, his judgment may have been perverted, by education, by authority, by party zeal, or by some other of the common causes of error, from the influence of which neither parts nor integrity exempt the human understanding.

In such a state of mind, so amiable, and so becoming every good man, has nature left him destitute of any rational means by which he may be enabled, either to correct his judgment if it be wrong, or to confirm it if it be right?

I hope it is not so. I hope that, by the means which nature has furnished, controversies about first principles may be brought to an issue, and that the real lovers of truth may come to unanimity with regard to them.

XIV. *Difficulty attending disputes about first principles.*—[It is true, that, in other controversies, the process by which the truth of a proposition is discovered, or its falsehood detected, is, by showing its necessary connexion with first principles, or its repugnancy to them. It is true, likewise, that when the controversy is, whether a proposition be itself a first principle, this process cannot be applied. The truth, therefore, in controversies of this kind, labours under a peculiar disadvantage. But it has advantages of another kind to compensate this.]

XV. *Equipollent advantages.*—[1. For, in the *first* place, in such controversies, *every man* is a competent judge; and therefore it is difficult to impose upon mankind.]

XVI. *Authority in first principles different from its influence in abstruse truths.*—To judge of first principles, requires no more

than a sound mind free from prejudice, and a distinct conception of the question. The learned and the unlearned, the philosopher and the day-labourer, are upon a level, and will pass the same judgment, when they are not misled by some bias, or taught to renounce their understanding from some mistaken religious principle.

[In matters beyond the reach of common understanding, the many are led by the few, and willingly yield to their authority. But, in matters of common sense, the few must yield to the many, when local and temporary prejudices are removed.] No man is now moved by the subtile arguments of Zeno against motion, though perhaps he knows not how to answer them.

XVII. *Difference between ancient and modern scepticism.*— The ancient sceptical system furnishes a remarkable instance of this truth. That system, of which Pyrrho was reputed the father, was carried down, through a succession of ages, by very able and acute philosophers, who taught men to believe nothing at all, and esteemed it the highest pitch of human wisdom to withhold assent from every proposition whatsoever. It was supported with very great subtilty and learning, as we see from the writings of Sextus Empiricus, the only author of that sect whose writings have come down to our age. The assault of the Sceptics against all science seems to have been managed with more art and address than the defence of the Dogmatists.

Yet, as this system was an insult upon the common sense of mankind, it died away of itself; and it would be in vain to attempt to revive it. The modern scepticism is very different from the ancient, otherwise it would not have been allowed a hearing; and, when it has lost the grace of novelty, it will die away also, though it should never be refuted.

[The modern scepticism, I mean that of Mr. Hume, is built *upon principles which were very generally maintained by philosophers,* though they did not see that they led to scepticism. Mr. Hume, by tracing, with great acuteness and ingenuity, the consequences of principles commonly received, has shown that they overturn all knowledge, and at last overturn themselves and leave the mind in perfect suspense.]

[2. *Secondly,* We may observe, that opinions which contradict first principles are distinguished from other errors by this; that they are not only false, but *absurd:* and, to discountenance absurdity, nature hath given us a particular emotion, to wit, *that of ridicule,* which seems intended for this very purpose of putting out of countenance what is absurd, either in opinion or practice.]

XVIII. *Respective provinces of ridicule and argument.*— [This weapon, when properly applied, cuts with as keen an edge as argument. Nature hath furnished us with the first to *expose*

absurdity; as with the last to *refute error.* Both are well fitted for their several offices, and are equally friendly to truth when properly used.]

Both may be abused to serve the cause of error: but the same degree of judgment, which serves to detect the abuse of argument in false reasoning, serves to detect the abuse of ridicule when it is wrong directed.

Some have from nature a happier talent for ridicule than others; and the same thing holds with regard to the talent of reasoning. Indeed, I conceive there is hardly any absurdity, which, when touched with the pencil of a Lucian, a Swift, or a Voltaire, would not be put out of countenance, when there is not some religious panic, or very powerful prejudice, to blind the understanding.

XIX. *Ridicule sometimes wholly inoperative.*—[But it must be acknowledged, that the emotion of ridicule, even when most natural, may be stifled by an emotion of a contrary nature, and cannot operate till that is removed.

Thus, if the *notion of sanctity* is annexed to an object, it is no longer a laughable matter; and this visor must be pulled off before it appears ridiculous. Hence we see, that notions which appear most ridiculous to all who consider them coolly and indifferently, have no such appearance to those who never thought of them, but under the impression of religious awe and dread.]

XX. *The absurdity of ridicule may escape immediate detection in various ways.*—[Even where religion is not concerned, (1) the *novelty of an opinion* to those who are too fond of novelties; (2) the *gravity and solemnity* with which it is introduced; (3) *the opinion we have entertained of the author;* (4) *its apparent connexion with principles already embraced,* or (5) *subserviency to interests which we have at heart;* and, above all, (6) *its being fixed in our minds at that time of life when we receive implicitly what we are taught;* may cover its absurdity, and fascinate the understanding for a time.]

But if ever we are able to view it naked, and stripped of those adventitious circumstances from which it borrowed its importance and authority, the natural emotion of ridicule will exert its force. An absurdity can be entertained by men of sense no longer than it wears a mask. When any man is found who has the skill or the boldness to pull off the mask, it can no longer bear the light; it slinks into dark corners for a while, and then is no more heard of, but as an object of ridicule.

Thus I conceive, that first principles, which are really the dictates of common sense, and directly opposed to absurdities in opinion, will always, from the constitution of human nature, support themselves, and gain rather than lose ground among mankind.

XXI. *Diverse modes of reasoning about first principles.*— [3. *Thirdly*, it may be observed, that although it is contrary to the nature of first principles to admit of *direct* or *apodictical* proof; yet there are *certain ways of reasoning even about them*,* by which those that are just and solid may be confirmed, and those that are false may be detected. It may here be proper to mention some of the topics from which we may reason in matters of this kind.]

[*First*, it is a good argument ad hominem, if it can be shown, that a first principle which a man rejects, stands upon the same footing with others which he admits: for, when this is the case, he must be guilty of an inconsistency who holds the one and rejects the other.]

XXII.† [Thus the faculties of consciousness, of memory, of external sense, and of reason, are all equally the gifts of nature. No good reason can be assigned for receiving the testimony of one of them, which is not of equal force with regard to the others. The greatest sceptics admit the testimony of consciousness, and allow, that what it testifies is to be held as a first principle. If, therefore, they reject the immediate testimony of sense, or of memory, they are guilty of an inconsistency.]

[*Secondly*, a first principle may admit of a proof ad absurdum.] In this kind of proof, which is very common in mathematics, we suppose the contradictory proposition to be true. We trace the consequences of that supposition in a train of reasoning; and if we find any of its necessary consequences to be manifestly absurd, we conclude the supposition from which it followed to be false; and therefore its contradictory to be true.

There is hardly any proposition, especially of those that may claim the character of first principles, that stands alone and unconnected. It draws many others along with it in a chain that cannot be broken. He that takes it up must bear the burden of all its consequences; and if that is too heavy for him to bear, he must not pretend to take it up.

[*Thirdly*, I conceive, that the *consent of ages* and nations, of the learned and unlearned, ought to have great authority with regard to first principles, where every man is a competent judge.]

Our ordinary conduct in life is built upon first principles, as well as our speculations in philosophy; and every motive to action supposes some belief. When we find a general agreement among men, in principles that concern human life, this must have great authority with every sober mind that loves truth.

* (1) Argumentum ad hominem. (2) Argumentum ad absurdum. (3) General consent. (4) If they precede any description of education. (5) If they are necessary to the conduct of life.

† The author here applies the first mode of reasoning about first principles to his own system.

XXIII. *The third argument respected by Berkeley.*—[It is pleasant to observe the fruitless pains which Bishop Berkeley takes to show, that his system of the non-existence of a material world did not contradict the sentiments of *the vulgar*, but those only of the philosophers.]

With good reason he dreaded more to oppose the authority of vulgar opinion in a matter of this kind, than all the schools of philosophers.

XXIV. *Objection and answer.*—[Here, perhaps, it will be said, What has authority to do in matters of opinion? Is truth to be determined by most votes? Or is authority to be again raised out of its grave to tyrannize over mankind?]

I am aware that, in this age, an advocate for authority has a very unfavourable plea; but I wish to give no more to authority than is its due.

Most justly do we honour the names of those benefactors to mankind who have contributed more or less to break the yoke of that authority which deprives men of the natural, the unalienable right of judging for themselves; but while we indulge a just animosity against this authority, and against all who would subject us to its tyranny, let us remember how common the folly is, of going from one faulty extreme into the opposite.

XXV. *Authority auxiliary to judgment.*—[Authority, though a very tyrannical mistress to private judgment, may yet, on some occasions, be *a useful handmaid;* this is all she is entitled to, and this is all I plead in her behalf.

The justice of this plea will appear by putting a case in a science, in which, of all sciences, authority is acknowledged to have least weight.]

Suppose a mathematician has made a discovery in that science, which he thinks important; that he has put his demonstration in just order; and, after examining it with an attentive eye, has found no flaw in it; I would ask, Will there not be still in his breast some diffidence, some jealousy lest the ardour of invention may have made him overlook some false step? This must be granted.

He commits his demonstration to the examination of a mathematical friend, whom he esteems a competent judge, and waits with impatience the issue of his judgment. Here I would ask again, Whether the verdict of his friend, according as it is favourable or unfavourable, will not greatly increase or diminish his confidence in his own judgment? Most certainly it will, and it ought.

If the judgment of his friend agree with his own, especially if it be confirmed by two or three able judges, he rests secure of his discovery without further examination; but if it be unfavourable, he is brought back into a kind of suspense, until

the part that is suspected undergoes a new and a more rigorous examination.

I hope what is supposed in this case is agreeable to nature, and to the experience of candid and modest men on such occasions; yet here we see a man's judgment, even in a mathematical demonstration, conscious of some feebleness in itself, seeking the aid of authority to support it, greatly strengthened by that authority, and hardly able to stand erect against it, without some new aid.

Society in judgment, of those who are esteemed fair and competent judges, has effects very similar to those of civil society; it gives strength and courage to every individual; it removes that timidity which is as naturally the companion of solitary judgment, as of a solitary man in the state of nature.

Let us judge for ourselves, therefore, but let us not disdain to take that aid from the authority of other competent judges, which a mathematician thinks it necessary to take in that science, which of all sciences has least to do with authority,

XXVI. In a matter *of common sense*, every man is no less a competent judge, than a mathematician is in a mathematical demonstration; and there must be a great presumption that the judgment of mankind, in such a matter, is the natural issue of those faculties which God hath given them. Such a judgment can be erroneous only when there is some cause of the error, as general as the error is. When this can be shown to be the case, I acknowledge it ought to have its due weight. But to suppose a general deviation from truth among mankind in things self-evident, of which no cause can be assigned, is highly unreasonable.

XXVII. *A second objection.*—[Perhaps it may be thought impossible to collect the general opinion of men upon any point whatsoever; and therefore, that this authority can serve us in no stead in examining first principles. But I apprehend, that, in many cases, this is neither impossible nor difficult.]

Who can doubt whether men have universally believed the existence of a material world? Who can doubt whether men have universally believed, that every change that happens in nature must have a cause? Who can doubt whether men have universally believed, that there is a right and a wrong in human conduct; some things that merit blame, and others that are entitled to approbation?

XXVIII. [*The universality of these opinions*, and of many such that might be named, is *sufficiently evident*, (1) from the *whole tenor of human conduct*, as far as our acquaintance reaches, and (2) *from the history of all ages and nations* of which we have any records.

(3) There are other opinions that appear to be universal, *from what is common in the structure of all languages*.]

Language is the express image and picture of human thoughts; and from the picture we may draw some certain conclusions concerning the original.

We find in all languages the same parts of speech; we find nouns, substantive and adjective; verbs, active and passive, in their various tenses, numbers and moods. Some rules of syntax are the same in all languages.

Now [what is common in the structure of languages, indicates an uniformity of opinion in those things upon which that structure is grounded.]

The distinction between substances and the qualities belonging to them; between thought, and the being that thinks; between thought, and the objects of thought; is to be found in the structure of all languages: and therefore, systems of philosophy, which abolish those distinctions, wage war with the common sense of mankind.

We are apt to imagine, that those who formed languages were no metaphysicians; but the first principles of all sciences are the dictates of common sense, and lie open to all men; and every man who has considered the structure of language in a philosophical light, will find infallible proofs that those who have framed it, and those who use it with understanding, have the power of making accurate distinctions, and of forming general conceptions, as well as philosophers. Nature has given those powers to all men, and they can use them when their occasions require it; but they leave it to the philosophers to give names to them, and to descant upon their nature. In like manner, nature has given eyes to all men, and they can make good use of them; but the structure of the eye, and the theory of vision, is the business of philosophers.

XXIX. [*Fourthly, opinions* that appear so *early* in the minds of men, *that* they *cannot be the effect of education*, or of false reasoning, have a good claim to be considered as first principles.] Thus the belief we have, that the persons about us are living and intelligent beings, is a belief for which perhaps we can give some reason, when we are able to reason; but we had this belief before we could reason, and before we could learn it by instruction. It seems therefore to be an immediate effect of our constitution.

[*Fifthly*, the *last* topic I shall mention is, when an opinion is so *necessary in the conduct of life*, that without the belief of it, a man must be led into a thousand absurdities in practice, such an opinion, when we can give no other reason for it, may safely be taken for a first principle.]

[Thus I have endeavoured to show, that although first principles are not capable of direct proof, yet differences, that may

happen with regard to them among men of candour, are not without remedy; that nature has not left us destitute of means by which we may discover errors of this kind; and that there are ways of reasoning, with regard to first principles, by which those that are truly such may be distinguished from vulgar errors or prejudices.]

QUESTIONS FOR EXAMINATION.

Distinctions of our judgments?
Requisites to intuitive judgment?
Why have modern philosophers entertained doubts concerning first principles?
Into what opposite extremes have they fallen on this subject?
All our knowledge based on first principles?
In what respect do the conclusions drawn from them differ from the principles themselves?
How do mathematical axioms differ from philosophic first principles?
In what manner would the enumeration of these principles tend to the advancement of knowledge?
What advantage do mathematics possess over other sciences?
What advantages generally would result from laying down first principles as the basis of every branch of philosophy?
Use of definitions?
Whence the difficulty in all disputes concerning first principles?
Advantages equivalent to this inconvenience?
Authority in first principles different in kind and effect from authority in abstruse investigations?
How does modern differ from ancient scepticism?
Ridicule how far distinct from argument?
When is ridicule totally inapplicable?
Which are the various modes of reasoning about first principles?
How does Reid apply the first to his own system?
Berkeley seems to have respected the "consent of ages?"
The criterion of universal opinions?

CHAPTER V.

THE FIRST PRINCIPLES OF CONTINGENT TRUTHS.

I. "SURELY," says Bishop Berkeley, "it is a work well deserving our pains, to make a strict inquiry concerning the first principles of knowledge; to sift and examine them on all sides." What was said in the last chapter, is intended both to show the importance of this inquiry, and to make it more easy.

But, in order that such an inquiry may be actually made, it is necessary that the first principles of knowledge be distinguished from other truths, and presented to view, that they may be sifted and examined on all sides. In order to this end, I shall attempt a detail of those I take to be such, and of the reasons why I think them entitled to that character.

If the enumeration should appear to some redundant, to others deficient, and to others both; if things, which I conceive to be first principles, should to others appear to be vulgar errors, or to be truths which derive their evidence from other truths, and therefore not first principles; in these things every man must judge for himself. I shall rejoice to see an enumeration more perfect in any or in all of those respects; being persuaded, that the agreement of men of judgment and candour in first principles, would be of no less consequence to the advancement of knowledge in general, than the agreement of mathematicians in the axioms of geometry has been to the advancement of that science.

II. *All truths reducible to two classes.*—[The truths that fall within the compass of human knowledge, whether they be self-evident, or deduced from those that are self-evident, may be reduced to two classes. They are either necessary and immutable truths, whose contrary is impossible; or they are contingent and mutable, depending upon some effect of will and power, which had a beginning, and may have an end.]

That a cone is the third part of a cylinder of the same base and the same altitude, is a necessary truth. It depends not upon the will and power of any being. It is immutably true, and the contrary impossible. That the sun is the centre, about which the earth, and the other planets of our system, perform their revolutions, is a truth; but it is not a necessary truth. It depends upon the power and will of that Being who made the sun and all the planets, and who gave them those motions that seemed best to him.

III. *Of the mode of expressing necessary truths.*—[If all truths were necessary truths, there would be no occasion for different tenses in the verbs by which they are expressed. What is true in the present time, would be true in the past and future; and there would be no change or variation of any thing in nature.

We use the present tense in expressing necessary truths; *but it is only because there is no flexion of the verb which includes all times.*] When I say that three is the half of six, I use the present tense only; but I mean to express not only what now is, but what always was, and always will be; and so every proposition is to be understood by which we mean to express a necessary truth. [Contingent truths are of another nature. As they are mutable, they may be true at one time, and not at another; and therefore the expression of them must include some point or period of time.]

[If language had been a contrivance of philosophers, they would probably have given some flexion to the indicative mood of verbs, which extended to all times past, present, and future; for such a flexion only would be fit to express necessary propo-

sitions, which have no relation to time. But there is no language, as far as I know, in which such a flexion of verbs is to be found. Because the thoughts and discourse of men are seldom employed about *necessary truths*, but commonly about such as are *contingent*; languages are fitted to express the last rather than the first.]

IV. *The distinction of truths into abstract and concerning real existences, not coincident with that of necessary and contingent.*—[The distinction commonly made between abstract truths, and those that express matters of fact, or real existences, coincides in a great measure, but not altogether, with that between necessary and contingent truths. The necessary truths that fall within our knowledge are for the most part abstract truths. We must except the existence and nature of the Supreme Being, which is necessary. Other existences are the effects of will and power. They had a beginning, and are mutable.] Their nature is such as the Supreme Being was pleased to give them. Their attributes and relations must depend upon the nature God has given them; the powers with which he has endowed them; and the situation in which he hath placed them.

V. *No contingent truth inferred from necessary principles.*—The conclusions deduced by reasoning from first principles, will commonly be necessary or contingent, according as the principles are from which they are drawn. [On the one hand, I take it to be certain, that whatever can, by just reasoning, be inferred from a principle that is necessary, must be a necessary truth, and that no contingent truth can be inferred from principles that are necessary.]

Thus, as the axioms in mathematics are all necessary truths; so are all the conclusions drawn from them; that is, the whole body of that science. But from no mathematical truth can we deduce the existence of any thing; not even of the objects of the science.

VI. *But one necessary truth from contingent principles.*—[On the other hand, I apprehend there are very few cases in which we can, from principles that are contingent, deduce truths that are necessary. I can only recollect *one* instance of this kind, namely, that, from the existence of things contingent and mutable, we can infer the existence of an immutable and eternal cause of them.]

As the minds of men are occupied much more about truths that are contingent than about those that are necessary, I shall first endeavour to point out the principles of the former kind.

1. *First*, then, I hold, as a first principle, the existence of everything of which I am *conscious*.

Consciousness is an operation of the understanding of its own kind, and cannot be logically defined. The objects of it are our present pains, our pleasures, our hopes, our fears, our desires, our

doubts, our thoughts of every kind; in a word, all the passions, and all the actions and operations of our own minds, while they are present. We may remember them when they are past; but we are conscious of them only while they are present.

When a man is conscious of pain, he is certain of its existence; when he is conscious that he doubts, or believes, he is certain of the existence of those operations.

But the irresistible conviction he has of the reality of those operations is not the effect of reasoning; it is immediate and intuitive. The existence therefore of those passions and operations of our minds, of which we are conscious, is a first principle, which nature requires us to believe upon her authority.

If I am asked to prove that I cannot be deceived by consciousness; to prove that it is not a fallacious sense; I can find no proof. I cannot find any antecedent truth from which it is deduced, or upon which its evidence depends. It seems to disdain any such derived authority, and to claim my assent in its own right.

If any man could be found so frantic as to deny that he thinks, while he is conscious of it; I may wonder, I may laugh, or I may pity him, but I cannot reason the matter with him. We have no common principles from which we may reason, and therefore can never join issue in an argument.

VII. *The existence of any thing of which we are conscious, a principle universally admitted.*—[This, I think, is the only principle of common sense that has never directly been called in question. It seems to be so firmly rooted in the minds of men, as to retain its authority with the greatest sceptics. Mr. Hume, after annihilating body and mind, time and space, action and causation, and even his own mind, acknowledges the reality of the thoughts, sensations and passions of which he is conscious.]

No philosopher has attempted by any hypothesis to account for this consciousness of our own thoughts, and the certain knowledge of their real existence which accompanies it. By this they seem to acknowledge, that this at least is an original power of the mind; a power by which we not only have ideas, but original judgments, and the knowledge of real existence.

[I cannot reconcile this immediate knowledge of the operations of our own minds with Mr. Locke's theory, that all knowledge consists in perceiving the agreement and disagreement of ideas. What are the ideas, from whose comparison the knowledge of our own thoughts results? Or what are the agreements or disagreements which convince a man that he is in pain when he feels it?]

Neither can I reconcile it with Mr. Hume's theory, that to believe the existence of anything, is nothing else than to have a strong and lively conception of it; or, at most, that belief is only some modification of the idea which is the object of belief. For

not to mention, that propositions, not ideas, are the object of belief; in all that variety of thoughts and passions, of which we are conscious, we believe the existence of the weak as well as of the strong, the faint as well as the lively. No modification of the operations of our minds disposes us to the least doubt of their real existence.

* VIII. *Criterions.*—As therefore the *real existence of our thoughts*, and of all the *operations* and feelings of our own minds, (1) is believed by all men; (2) as we find ourselves incapable of doubting it, and (3) as incapable of offering any proof of it, it may justly be considered as a first principle, or dictate of common sense.

But although this principle rests upon no other, a very considerable and important branch of human knowledge rests upon it.

IX. *A knowledge of the operations of our minds rests on a firm basis.*—[For from this source of consciousness is derived all that we know, and indeed all that we can know, of the structure, and of the powers of our own minds; from which we may conclude, that *there is no branch of knowledge that stands upon a firmer foundation;* for surely no kind of evidence can go beyond that of consciousness.]

☞ How does it come to pass then, that in this branch of knowledge there are so many and so contrary systems? so many subtile controversies that are never brought to an issue, and so little fixed and determined? Is it possible that philosophers should differ most where they have the surest means of agreement? where every thing is built upon a species of evidence which all men acquiesce in, and hold to be the most certain?

[This strange phenomenon may, I think, be accounted for, if we distinguish between *consciousness and reflection*, which are often improperly confounded.]

The first is common to all men at all times, but is insufficient of itself to give us clear and distinct notions of the operations of which we are conscious, and of their mutual relations, and minute distinctions. The second, to wit, attentive reflection upon those operations, making them objects of thought, surveying them attentively, and examining them on all sides, is so far from being common to all men, that it is the lot of very few. The greatest part of men, either through want of capacity, or from other causes, never reflect attentively upon the operations of their own minds. The habit of this reflection, even in those whom nature has fitted for it, is not to be attained without much pains and practice. We can know nothing of the immediate objects of sight, but by the testimony of our eyes; and I apprehend, that if mankind had found as great difficulty in giving attention to the objects of sight, as they find in attentive

* Vide sect. xxxii. of this chapter.

reflection upon the operations of their own minds, our knowledge of the first might have been in as backward a state as our knowledge of the last.

But this darkness will not last for ever. Light will arise upon this benighted part of the intellectual globe. When any man is so happy as to delineate the powers of the human mind as they really are in nature, men that are free from prejudice, and capable of reflection, will recognise their own features in the picture; and then the wonder will be, how things so obvious could be so long wrapped up in mystery and darkness; how men could be carried away by false theories and conjectures, when the truth was to be found in their own breasts if they had but attended to it.

[2. Another first principle, I think, is, That the thoughts of which I am conscious, are the thoughts of a being which I call *myself*, my *mind*, my *person*.]

The thoughts and feelings of which we are conscious are continually changing, and the thought of this moment is not the thought of the last; but something which I call myself, remains under this change of thought. This self has the same relation to all the successive thoughts I am conscious of, they are all my thoughts; and every thought which is not my thought, must be the thought of some other person.

If any man asks a proof of this, I confess I can give none; there is an evidence in the proposition itself which I am unable to resist. Shall I think, that thought can stand by itself without a thinking being? or that ideas can feel pleasure or pain? My nature dictates to me that it is impossible.

And that nature has dictated the same to all men, appears from the structure of all languages: for in all languages men have expressed thinking, reasoning, willing, loving, hating, by personal verbs, which from their nature require a person who thinks, reasons, wills, loves, or hates. From which it appears, that men have been taught by nature to believe that thought requires a thinker, reason a reasoner, and love a lover.

X. *Hume partly admits the evidence of consciousness.*—[Here we must leave Mr. Hume, who conceives it to be a vulgar error, that besides the thoughts we are conscious of, there is a mind which is the subject of those thoughts. If the mind be any thing else than impressions and ideas, it must be a word without a meaning. The mind, therefore, according to this philosopher, is a word which signifies a bundle of perceptions; or, when he defines it more accurately, "it is that succession of related ideas and impressions, of which we have an intimate memory and *consciousness*."]

I am, therefore, that succession of related ideas and impressions of which I have the intimate memory and consciousness.

But who is the *I* that has this memory and consciousness of a succession of ideas and impressions? Why, it is nothing but that succession itself.

Hence I learn, that this succession of ideas and impressions intimately remembers, and is conscious of itself. I would wish to be further instructed, whether the impressions remember and are conscious of the ideas, or the ideas remember and are conscious of the impressions, or if both remember and are conscious of both? and whether the ideas remember those that come after them, as well as those that were before them? These are questions naturally arising from this system, that have not yet been explained.

This, however, is clear, that this succession of ideas and impressions not only remembers and is conscious, but that it judges, reasons, affirms, denies; nay, that it eats and drinks, and is sometimes merry, and sometimes sad.

If these things can be ascribed to a succession of ideas and impressions, in a consistency with common sense, I should be very glad to know what is nonsense.

XI. The scholastic philosophers have been wittily ridiculed, by representing them as disputing upon this question, "Num chimæra bombinans in vacuo possit comedere secundas intentiones?" and I believe the wit of man cannot invent a more ridiculous question. But, if Mr. Hume's philosophy be admitted, this question deserves to be treated more gravely: for if, as we learn from this philosophy, a succession of ideas and impressions may eat, and drink, and be merry, I see no good reason why a chimera, which, if not the same, is of kin to an idea, may not chew the cud upon that kind of food which the schoolmen call second intentions.

XII. [3. Another first principle I take to be, That those things did really happen which I distinctly *remember*.]

This has one of the surest marks of a first principle; for no man ever pretended to prove it, and yet no man in his wits calls it in question; the testimony of memory, like that of consciousness, is immediate; it claims our assent upon its own authority.

☞ Suppose that a learned counsel, in defence of a client against the concurring testimony of witnesses of credit, should insist upon a new topic to invalidate the testimony. "Admitting," says he, "the integrity of the witnesses, and that they distinctly remember what they have given in evidence; it does not follow that the prisoner is guilty. It has never been proved that the most distinct memory may not be fallacious. Show me any necessary connexion between that act of the mind which we call memory, and the past existence of the event remembered. No man has ever offered a shadow of argument to prove such a connexion; yet this is one link of the chain of proof

against the prisoner; and if it have no strength, the whole proof falls to the ground: until this, therefore, be made evident, until it can be proved, that we may safely rest upon the testimony of memory for the truth of past events, no judge or jury can justly take away the life of a citizen upon so doubtful a point."

I believe we may take it for granted, that this argument from a learned counsel would have no other effect upon the judge or jury, than to convince them that he was disordered in his judgment. Counsel is allowed to plead every thing for a client that is fit to persuade or to move; yet I believe no counsel ever had the boldness to plead this topic. And for what reason? For no other reason, surely, but because it is absurd. Now, what is absurd at the bar, is so in the philosopher's chair. What would be ridiculous, if delivered to a jury of honest sensible citizens, is no less so when delivered gravely in a philosophical dissertation.

XIII. *Hume indirectly impeaches the evidence of memory.*—Mr. Hume has not, as far as I remember, directly called in question the testimony of memory; but *he has laid down the premises by which its authority is overturned*, leaving it to his reader to draw the conclusion.

He labours to show, that the belief or assent which always attends the memory and senses is nothing but the vivacity of those perceptions which they present. He shows very clearly, that this vivacity gives no ground to believe the existence of external objects. And it is obvious, that it can give as little ground to believe the past existence of the objects of memory.

Indeed the theory concerning ideas, so generally received by philosophers, destroys all the authority of memory, as well as the authority of the senses. Des Cartes, Malebranche, and Locke, were aware that this theory made it necessary for them to find out arguments to prove the existence of external objects, which the vulgar believe upon the bare authority of their senses; but those philosophers were not aware, that this theory made it equally necessary for them to find arguments to prove the existence of things past, which we remember, and to support the authority of memory.

All the arguments they advanced to support the authority of our senses, were easily refuted by Bishop Berkeley and Mr. Hume, being indeed very weak and inconclusive. And it would have been as easy to answer every argument they could have brought, consistent with their theory, to support the authority of memory.

[For, according to that theory, the immediate object of memory, as well as of every other operation of the understanding, is an idea present in the mind. And, from the present existence

of this idea of memory I am left to infer, by reasoning, that six months, or six years ago, there did exist an object similar to this idea.]

But what is there in the idea that can lead me to this conclusion? What mark does it bear of the date of its archetype? Or what evidence have I that it had an archetype, and that it is not the first of its kind?

Perhaps it will be said, that this idea or image in the mind must have had a cause.

I admit, that if there is such an image in the mind it must have had a cause, and a cause able to produce the effect; but what can we infer from its having a cause? Does it follow that the effect is a type, an image, a copy of its cause? Then it will follow, that a picture is an image of the painter, and a coach of the coachmaker.

A past event may be known by reasoning, but that is not remembering it. When I remember a thing distinctly, I disdain equally to hear reasons for it or against it. And so I think does every man in his senses.

XIV. [4. Another first principle is our own *personal identity* and continued existence, as far back as we remember any thing distinctly.]

This we know immediately, and not by reasoning. It seems, indeed, to be a part of the testimony of memory. Every thing we remember has such a relation to ourselves, as to imply necessarily our existence at the time remembered. And there cannot be a more palpable absurdity than that a man should remember what happened before he existed. He must therefore have existed as far back as he remembers any thing distinctly, if his memory be not fallacious. This principle, therefore, is so connected with the last mentioned, that it may be doubtful whether both ought not to be included in one. Let every one judge of this as he sees reason. The proper notion of identity, and the sentiments of Mr. Locke on this subject, have been considered before under the head of memory.

XV. [5. Another first principle is, That those things do really exist which we distinctly perceive by our *senses*, and are what we perceive them to be.]

☞ It is too evident to need proof, that all men are by nature led to give implicit faith to the distinct testimony of their senses, *long before they are capable of any bias from prejudices of education or of philosophy.*

How came we at first to know that there are certain beings about us whom we call father, and mother, and sisters, and brothers, and nurse? Was it not by the testimony of our senses? How did these persons convey to us any information or instruction? Was it not by means of our senses?

It is evident we can have no communication, no correspondence or society with any created being, but by means of our senses. And until we rely upon their testimony, we must consider ourselves as being alone in the universe, without any fellow-creature, living or inanimate, and be left to converse with our own thoughts.

XVI. *The knowledge of other spirits rejected, unintentionally, by the Berkleians.*—[Bishop Berkeley surely did not duly consider, that it is by means of the material world that we have any correspondence with *thinking beings*, or any knowledge of their existence, and that by depriving us of the material world, he deprived us at the same time of family, friends, country, and every human creature; of every object of affection, esteem or concern, except ourselves.]

The good Bishop surely never intended this. He was too warm a friend, too zealous a patriot, and too good a Christian, to be capable of such a thought. He was not aware of the consequences of his system, and therefore they ought not to be imputed to him; but we must impute them to the system itself. It stifles every generous and social principle.

When I consider myself as speaking to men who hear me, and can judge of what I say, I feel that respect which is due to such an audience. I feel an enjoyment in a reciprocal communication of sentiments with candid and ingenious friends, and my soul blesses the Author of my being, who has made me capable of this manly and rational entertainment.

But the Bishop shows me, that this is all a dream; that I see not a human face; that all the objects I see, and hear, and handle, are only the ideas of my own mind; ideas are my only companions. Cold company, indeed! Every social affection freezes at the thought!

But, my Lord Bishop, are there no minds left in the universe but my own?

Yes, indeed: it is only the material world that is annihilated; every thing else remains as it was.

This seems to promise some comfort in my forlorn solitude. But do I see those minds? No. Do I see their ideas? No. Nor do they see me or my ideas. They are then no more to me than the inhabitants of Solomon's isles, or of the moon; and my melancholy solitude returns. Every social tie is broken, and every social affection is stifled.

This dismal system, which, if it could be believed, would deprive men of every social comfort, a very good Bishop, by strict and accurate reasoning, deduced from the principles commonly received by philosophers concerning ideas. The fault is not in the reasoning, but in the principles from which it is drawn.

All the arguments urged by Berkeley and Hume against the existence of a material world are grounded upon this principle, That we do not perceive external objects themselves, but certain images or ideas in our own minds. But this is no dictate of common sense, but directly contrary to the sense of all who have not been taught it by philosophy.

XVII. *The truth of the evidence of our senses confirmed by an "argumentum ad hominem."*—We have before examined the reasons given by philosophers, to prove that ideas, and not external objects, are the immediate objects of perception, and the instances given to prove the senses fallacious. [Without repeating what has before been said upon those points, we shall only here observe, that if external objects be perceived immediately, we have the same reason to believe their existence as philosophers have to believe the existence of ideas, while they hold them to be the immediate objects of perception.]

XVIII. [6. Another first principle, I think, is, That we have some degree of *power* over our actions, and the determinations of our will.]

All power must be derived from the fountain of power, and of every good gift. Upon his good pleasure its continuance depends, and it is always subject to his control.

Beings to whom God has given any degree of power, and understanding to direct them to the proper use of it, must be accountable to their Maker. But those who are intrusted with no power, can have no account to make; for all good conduct consists in the right use of power; all bad conduct in the abuse of it.

To call to account a being who never was intrusted with any degree of power, is an absurdity no less than it would be to call to an account an inanimate being. We are sure, therefore, if we have any account to make to the Author of our being, that we must have some degree of power, which, as far as it is properly used, entitles us to his approbation; and, when abused, renders us obnoxious to his displeasure.

XIX. *Locke's origin of our idea of power absurd.*—[It is not easy to say in what way we first get the notion or idea of power. It is neither an object of sense nor of consciousness. We see events, one succeeding another; but we see not the power by which they are produced. We are conscious of the operations of our minds: but power is not an operation of mind.] If we had no notions but such as are furnished by the external senses, and by consciousness, it seems to be impossible that we should ever have any conception of power. ☞ Accordingly, Mr. Hume, who has reasoned the most accurately upon this hypothesis, denies that we have any idea of power, and clearly refutes the account given by Mr. Locke of the origin of this idea.

XX. But it is in vain to reason from an hypothesis against a fact, the truth of which every man may see by attending to his own thoughts. It is evident, that *all men, very early in life,* not only *have an idea of power*, but a conviction that they have some degree of it in themselves: for this conviction is necessarily implied in many operations of mind, which are familiar to every man, and without which no man can act the part of a reasonable being.

* *First,* It is implied in every act of *volition.* "Volition, it is plain," says Mr. Locke, "is an act of the mind, knowingly exerting that dominion which it takes itself to have over any part of the man, by employing it in, or withholding it from any particular action." Every volition therefore implies a conviction of power to do the action willed. A man may desire to make a visit to the moon, or to the planet Jupiter; but nothing but insanity could make him will to do so. And if even insanity produced this effect, it must be by making him think it to be in his power.

Secondly. This conviction is implied in all *deliberation;* for no man in his wits deliberates whether he shall do what he believes not to be in his power. *Thirdly,* The same conviction is implied in every *resolution* or purpose *formed in consequence of deliberation.* A man may as well form a resolution to pull the moon out of her sphere, as to do the most insignificant action which he believes not to be in his power. The same thing may be said of every promise or contract wherein a man plights his faith; for he is not an honest man who promises what he does not believe he has power to perform.

As these operations imply a belief of some degree of power in ourselves; so there are others equally common and familiar, which imply a like belief with regard to others.

When we impute to a man any action or omission, as a ground of approbation or of blame, we must believe he had power to do otherwise. The same is implied in all advice, exhortation, command, and rebuke, and in every case in which we rely upon his fidelity in performing any engagement, or executing any trust.

It is not more evident that mankind have a conviction of the existence of a material world, than that they have the conviction of some degree of power in themselves, and in others; every one over his own actions, and the determinations of his will: a conviction so early, so general, and so interwoven with the whole of human conduct, that it must be the natural effect of our constitution, and intended by the Author of our being to guide our actions.

It resembles our conviction of the existence of a material

* Power is implied in volition, deliberation, and in resolution resulting from deliberation.

world in this respect also, that even those who reject it in speculation, find themselves under a necessity of being governed by it in their practice; and thus it will always happen when philosophy contradicts first principles.

XXI. *That the natural faculties are not fallacious, a first principle.*—[7. Another first principle is, That the natural faculties, by which we distinguish truth from error, are not fallacious. If any man should demand a proof of this, it is impossible to satisfy him. For suppose it should be mathematically demonstrated, this would signify nothing in this case; *because, to judge of a demonstration, a man must trust his faculties,* and take for granted the very thing in question.]

If a man's honesty were called in question, it would be ridiculous to refer it to the man's own word, whether he be honest or not. The same absurdity there is in attempting to prove, by any kind of reasoning, probable or demonstrative, that our reason is not fallacious, since the very point in question is, whether reasoning may be trusted.

If a sceptic should build his scepticism upon this foundation, that all our reasoning and judging powers are fallacious in their nature, or should resolve at least to withhold assent until it be proved that they are not; it would be impossible by argument to beat him out of this stronghold, and he must even be left to enjoy his scepticism.

Des Cartes certainly made a false step in this matter; for having suggested this doubt among others, that whatever evidence he might have from his consciousness, his senses, his memory, or his reason; yet possibly some malignant being had given him those faculties on purpose to impose upon him; and therefore, that they are not to be trusted without a proper voucher: to remove this doubt, he endeavours to prove the being of a Deity who is no deceiver; whence he concludes, that the faculties he had given him are true and worthy to be trusted.

XXII. *Des Cartes' proof of the truth of our faculties "a petitio principii."*—[It is strange that so acute a reasoner did not perceive, that in this reasoning there is evidently *a begging of the question.*

For if our faculties be fallacious, *why may they not deceive us in this reasoning as well as in others?* And if they are to be trusted in this instance without a voucher, why not in others?]

Every kind of reasoning for the veracity of our faculties, amounts to no more than taking their own testimony for their veracity, and this we must do implicitly, until God give us new faculties to sit in judgment upon the old; ☞ and the reason why Des Cartes satisfied himself with so weak an argument for the truth of his faculties, most probably was, that he never seriously doubted of it.

XXIII. *This truth one of our earliest first principles.*—[If any truth can be said to be prior to all others in the order of nature, this seems to have the best claim; because in every instance of assent, whether upon intuitive, demonstrative, or probable evidence, the truth of our faculties is taken for granted, and is, as it were, one of the premises on which our assent is grounded.]

How then come we to be assured of this fundamental truth on which all others rest? Perhaps evidence, as in many other respects it resembles light, so in this also, that as light, which is the discoverer of all visible objects, discovers itself at the same time; so evidence, which is the voucher for all truth, vouches for itself at the same time.

This, however, is certain, that such is the constitution of the human mind, that evidence discerned by us, forces a corresponding degree of assent. And a man who perfectly understood a just syllogism, without believing that the conclusion follows from the premises, would be a greater monster than a man born without hands or feet.

We are born under a necessity of trusting to our reasoning and judging powers; and a real belief of their being fallacious cannot be maintained for any considerable time by the greatest sceptic, because it is doing violence to our constitution. It is like a man's walking upon his hands, a feat which some men upon occasion can exhibit: but no man ever made a long journey in this manner. Cease to admire his dexterity, and he will, like other men, betake himself to his legs.

XXIV. *Two characteristics common to several first principles.* —[We may here take notice of a property of the principle under consideration, that seems to be common to it with many other first principles, and which can hardly be found in any principle that is built solely upon reasoning; and that is, (1) *that in most men it produces its effect without ever being attended to, or made an object of thought.*] No man ever thinks of this principle, unless when he considers the grounds of scepticism; yet it invariably governs his opinions. When a man in the common course of life gives credit to the testimony of his senses, his memory, or his reason, he does not put the question to himself, whether these faculties may deceive him; yet the trust he reposes in them supposes an inward conviction, that, in that instance at least, they do not deceive him.

[It is another property of this and of many first principles, (2) *that they force assent in particular instances, more powerfully than when they are turned into a general proposition.* Many sceptics have denied every general principle of science, *excepting perhaps the existence of our present thoughts;* yet these men reason, and refute, and prove, they assent and dissent in particular

cases.] They use reasoning to overturn all reasoning, and judge that they ought to have no judgment, and see clearly that they are blind. Many have in general maintained that the senses are fallacious, yet there never was found a man so sceptical as not to trust his senses in particular instances, when his safety required it; and it may be observed of those who have professed scepticism, that their scepticism lies in generals, while in particulars they are no less dogmatical than others.

XXV. [8. Another first principle relating to existence is, that there is life and intelligence in our fellow-men with whom we converse.]

As soon as children are capable of asking a question, or of answering a question, as soon as they show the signs of love, of resentment, or of any other affection, they must be convinced that those with whom they have this intercourse are intelligent beings.

It is evident they are capable of such intercourse long before they can reason. Every one knows, that there is a social intercourse between the nurse and the child before it is a year old. It can, at that age, understand many things that are said to it.

It can, by signs, ask and refuse, threaten and supplicate. It clings to its nurse in danger, enters into her grief and joy, is happy in her soothing and caresses, and unhappy in her displeasure. That these things cannot be without a conviction in the child that the nurse is an intelligent being, I think must be granted.

Now I would ask how a child of a year old comes by this conviction? Not by reasoning surely, for children do not reason at that age. Nor is it by external senses, for life and intelligence are not objects of the external senses.

By what means, or upon what occasions nature first gives this information to the infant mind, is not easy to determine. We are not capable of reflecting upon our own thoughts at that period of life, and before we attain this capacity, we have quite forgot how or on what occasion we first had this belief; we perceive it in those who are born blind, and in others who are born deaf; and therefore nature has not connected it solely either with any object of sight, or with any object of hearing. When we grow up to the years of reason and reflection, this belief remains. No man thinks of asking himself what reason he has to believe that his neighbour is a living creature. He would be not a little surprised if another person should ask him so absurd a question; and perhaps could not give any reason which would not equally prove a watch or a puppet to be a living creature.

But, though you should satisfy him of the weakness of the reasons he gives for his belief, you cannot make him in the least doubtful. This belief stands upon another foundation than that

of reasoning; and therefore, whether a man can give good reasons for it or not, it is not in his power to shake it off.

XXVI. *We are convinced of the existence of intelligence in others.*—[Setting aside this natural conviction, I believe the best reason we can give, to prove that other men are living and intelligent, is, that *their words and actions indicate like powers of understanding as we are conscious of in ourselves.*] The very same argument applied to the works of nature, leads us to conclude, that there is an intelligent Author of nature, and appears equally strong and obvious in the last case as in the first; so that it may be doubted whether men, by the mere exercise of reasoning, might not as soon discover the existence of a Deity, as that other men have life and intelligence.

The knowledge of the last is absolutely necessary to our receiving any improvement by means of instruction and example; and, without these means of improvement, there is no ground to think that we should ever be able to acquire the use of our reasoning powers. This knowledge, therefore, must be antecedent to reasoning, and therefore must be a first principle.

[It cannot be said, that the judgments we form concerning life and intelligence in other beings are *at first* free from error. But the errors of children in this matter lie on the safe side; they are prone to attribute intelligence to things inanimate. These errors are of small consequence, and are gradually corrected by *experience* and ripe *judgment.*] But the belief of life and intelligence in other men, is absolutely necessary for us before we are capable of reasoning; and therefore the Author of our being hath given us this belief antecedently to all reasoning.

XXVII. [9. Another first principle I take to be, that certain features of the countenance, sounds of the voice, and gestures of the body, indicate certain thoughts and dispositions of mind.]

That many operations of the mind have their natural signs in the countenance, voice, and gesture, I suppose every man will admit. "Omnis enim motus animi," says Cicero, "suum quemdam habet a naturâ vultum, et vocem, et gestum." The only question is, whether we understand the signification of those signs, by the constitution of our nature, by a kind of natural perception similar to the perceptions of sense; or whether we gradually learn the signification of such signs from experience, as we learn that smoke is a sign of fire, or that the freezing of water is a sign of cold? I take the first to be the truth.

It seems to me incredible, that the notions men have of the expression of features, voice, and gesture, are entirely the fruit of experience. Children, almost as soon as born, may be frighted and thrown into fits by a threatening or angry tone of voice. I knew a man who could make an infant cry, by whistling a melancholy tune in the same or in the next room; and again, by alter-

ing his key, and the strain of his music, could make the child leap and dance for joy.

It is not by experience surely that we learn the expression of music; for its operation is commonly strongest the first time we hear it. One air expresses mirth and festivity; so that, when we hear it, it is with difficulty we can forbear to dance. Another is sorrowful and solemn. One inspires with tenderness and love; another with rage and fury.

> Hear how Timotheus' varied lays surprise,
> And bid alternate passions fall and rise;
> While at each change, the son of Lybian Jove
> Now burns with glory, and then melts with love.
> Now his fierce eyes with sparkling fury glow,
> Now sighs steal out, and tears begin to flow.
> Persians and Greeks, like turns of nature found,
> And the world's victor stood subdued by sound.

It is not necessary that a man have studied either music or the passions, in order to his feeling these effects. The most ignorant and unimproved, to whom Nature has given a good ear, feel them as strongly as the most knowing.

The countenance and gesture have an expression no less strong and natural than the voice. The first time one sees a stern and fierce look, a contracted brow, and a menacing posture, he concludes that the person is inflamed with anger. Shall we say, that, previous to experience, the most hostile countenance has as agreeable an appearance as the most gentle and benign? This surely would contradict all experience; for we know that an angry countenance will fright a child in the cradle. Who has not observed, that children, very early, are able to distinguish what is said to them in jest from what is said in earnest, by the tone of the voice, and the features of the face? They judge by these natural signs, even when they seem to contradict the artificial.

If it were by experience that we learn the meaning of features, and sound, and gesture, it might be expected that we should recollect the time when we first learnt those lessons, or, at least, some of such a multitude.

Those who give attention to the operations of children, can easily discover the time when they have their earliest notices from experience, such as that flame will burn, or that knives will cut. But no man is able to recollect in himself, or to observe in others, the time when the expression of the face, voice, and gesture, were learned.

Nay, I apprehend that it is impossible that this should be learned from experience.

XXVIII. *The connexion between the expression of the countenance, &c., and the thoughts of the mind, not first derived from experience.*—[When we see the sign, and see the thing signified

always conjoined with it, experience may be the instructor, and teach us how that sign is to be interpreted. But how shall experience instruct us when we see the sign only, when the thing signified is invisible? Now this is the case here; the thoughts and passions of the mind, as well as the mind itself, are invisible, and therefore their connexion with any sensible sign *cannot be first discovered by experience;* there must be some earlier source of this knowledge.]

Nature seems to have given to men a faculty or sense, by which this connexion is perceived. And the operation of this sense is very analogous to that of the external senses.

When I grasp an ivory ball in my hand, I feel a certain sensation of touch. In the sensation there is nothing external, nothing corporeal. The sensation is neither round nor hard; it is an act or feeling of the mind, from which I cannot, by reasoning, infer the existence of any body. But, by the constitution of my nature, the sensation carries along with it the conception and belief of a round hard body really existing in my hand.

In like manner, when I see the features of an expressive face, I see only figure and colour variously modified. But, by the constitution of my nature, the visible object brings along with it the conception and belief of a certain passion or sentiment in the mind of the person.

In the former case, a sensation of touch is the sign, and the hardness and roundness of the body I grasp is signified by that sensation. In the latter case, the features of the person is the sign, and the passion or sentiment is signified by it.

The power of natural signs, to signify the sentiments and passions of the mind, is seen (1) in the signs of *dumb persons,* who can make themselves to be understood in a considerable degree, even by those who are wholly inexperienced in that language.

It is seen in the traffic which has been frequently carried on between (2) *people that have no common acquired language.* They can buy and sell, and ask and refuse, and show a friendly or hostile disposition by natural signs.

It was seen still more in the (3) *actors among the ancients* who performed the *gesticulation* upon the stage, while others recited the words. To such a pitch was this art carried, that we are told Cicero and Roscius used to contend whether the orator could express any thing by words which the actor could not express in dumb show by gesticulation; and whether the same sentence or thought could not be acted in all the variety of ways in which the orator could express it in words.

But the most surprising exhibition of this kind, was that of the pantomimes among the Romans, who acted plays, or scenes of plays, without any recitation, and yet could be perfectly understood.

And here it deserves our notice, that although it required much study and practice in the pantomimes to excel in their art; yet it required neither study nor practice in the spectators to understand them. It was a natural language, and therefore understood by all men, whether Romans, Greeks, or barbarians, by the learned and the unlearned.

☞ Lucian relates, that a king, whose dominions bordered upon the Euxine sea, happening to be at Rome in the reign of Nero, and having seen a pantomime act, begged him of Nero, that he might use him in his intercourse with all the nations in his neighbourhood: "For," said he, "I am obliged to employ I don't know how many interpreters, in order to keep a correspondence with neighbours who speak many languages, and do not understand mine; but this fellow will make them all understand him."

[For these reasons, I conceive, it must be granted, not only that there is a connexion established by Nature between certain signs in the countenance, voice, and gesture, and the thoughts and passions of the mind; but also, that, *by our constitution,* we *understand* the meaning of those signs, and from the sign conclude the existence of the thing signified.]

XXIX. [10. Another first principle appears to me to be, That there is a certain *regard due to human testimony* in matters of fact, and even to human authority in matters of opinion.]

Before we are capable of reasoning about testimony or authority, there are many things which it concerns us to know, for which we can have no other evidence. The wise Author of nature hath planted in the human mind a propensity to rely upon this evidence before we can give a reason for doing so. This, indeed, puts our judgment almost entirely in the power of those who are about us, in the first period of life; but this is necessary both to our preservation and to our improvement. If children were so framed, as to pay no regard to testimony or to authority, they must, in the literal sense, perish for lack of knowledge. It is not more necessary that they should be fed before they can feed themselves, than that they should be instructed in many things before they can discover them by their own judgment.

But when our faculties ripen, we find reason to check that propensity to yield to testimony and to authority, which was so necessary and so natural in the first period of life. We learn to reason about the regard due to them, and see it to be a childish weakness to lay more stress upon them than reason justifies. Yet, I believe, to the end of life, most men are more apt to go into this extreme than into the contrary; and the natural propensity still retains some force.

The natural principles, by which our judgments and opinions

are regulated before we come to the use of reason, seem to be no less necessary to such a being as man, than those natural instincts which the Author of nature hath given us to regulate our actions during that period.

XXX. [11. There are many events depending upon *the will of man*, in which there is a self-evident probability, greater or less, according to circumstances.]

There may be in some individuals such a degree of phrenzy and madness, that no man can say what they may or may not do. Such persons we find it necessary to put under restraint, that, as far as possible, they may be kept from doing harm to themselves or to others. They are not considered as reasonable creatures, or members of society. But, as to men who have a sound mind, we depend upon a certain degree of regularity in their conduct; and could put a thousand different cases, wherein we could venture, ten to one, that they will act in such a way, and not in the contrary.

If we had no confidence in our fellow men that they will act such a part in such circumstances, it would be impossible to live in society with them: for that which makes men capable of living in society, and uniting in a political body under government, is, that their actions will always be regulated in a great measure by the common principles of human nature.

It may always be expected, that they will regard their own interest and reputation, and that of their families and friends; that they will repel injuries, and have some sense of good offices; and that they will have some regard to truth and justice, so far at least as not to swerve from them without temptation.

It is upon such principles as these, that all political reasoning is grounded. Such reasoning is never demonstrative, but it may have a very great degree of probability, especially when applied to great bodies of men.

XXXI. [12. The last principle of contingent truths I mention, is, that, in the *phenomena of nature*, what is to be, will probably be like to what has been in similar circumstances.]

We must have this conviction as soon as we are capable of learning any thing from experience; for all experience is grounded upon a belief that the future will be like the past. Take away this principle, and the experience of an hundred years makes us no wiser with regard to what is to come.

This is one of those principles, which, when we grow up and observe the course of nature, we can confirm by reasoning. We perceive that nature is governed by fixed laws, and that if it were not so, there could be no such thing as prudence in human conduct; there would be no fitness in any means to promote an end; and what, on one occasion, promoted it, might as probably, on another occasion, obstruct it.

But the principle is necessary for us before we are able to discover it by reasoning, and therefore is made a part of our constitution, and produces its effects before the use of reason.

This principle remains in all its force when we come to the use of reason; but we learn to be more cautious in the application of it. We observe more carefully the circumstances on which the past event depended, and learn to distinguish them from those which were accidentally conjoined with it.

In order to this, a number of experiments, varied in their circumstances, is often necessary. Sometimes a single experiment is thought sufficient to establish a general conclusion. Thus, when it was once found, that in a certain degree of cold, quicksilver became a hard and malleable metal, there was good reason to think, that the same degree of cold will always produce this effect to the end of the world.

I need hardly mention, that the whole fabric of natural philosophy is built upon this principle, and, if it be taken away, must tumble down to the foundation.

Therefore the great Newton lays it down as an axiom, or as one of his laws of philosophizing, in these words, "Effectuum naturalium ejusdem generis easdem esse causas." This is what every man assents to as soon as he understands it, and no man asks a reason for it. It has therefore the most genuine marks of a first principle.

It is very remarkable, that although all our expectation of what is to happen in the course of nature is derived from the belief of this principle, yet no man thinks of asking what is the ground of this belief.

Mr. Hume, I think, was the first who put this question; and he has shown clearly and invincibly, that it is neither grounded upon reasoning, nor has that kind of intuitive evidence which mathematical axioms have. It is not a necessary truth.

XXXII. *The three tests of first principles repeated.*—He has endeavoured to account for it upon his own principles. It is not my business at present to examine the account he has given of this universal belief of mankind; because, whether his account of it be just or not, (and I think it is not,) [yet, as (1) this belief is universal among mankind, and (2) is not grounded upon any antecedent reasoning, but (3) upon the constitution of the mind itself, it must be acknowledged to be a first principle, in the sense in which I use that word.]*

I do not at all affirm, that those I have mentioned are all the first principles from which we may reason concerning contingent truths. Such enumerations, even when made after much reflection, are seldom perfect.

* Vide sect. viii. of this chapter.

QUESTIONS FOR EXAMINATION.

All truths reducible to two classes?

If all truths were necessary, what change would be introduced in language?

The distinction of truths into abstract and concerning real existence not coincident with the former division?

Of what kind are those truths which we derive from necessary principles?

What principle is universally admitted?

Why is the foundation of our knowledge of the operations of the mind securely fixed?

Whence then the infinite disputes concerning this very branch of knowledge?

How far does Hume allow the evidence of conscience?

If the evidence of the senses be rejected by Berkeley, what knowledge have we of other thinking beings?

Reid makes use of an argumentum ad hominem to support the evidence of the senses?

Locke's origin of the idea of power shown to be absurd?

Why can no proof of the truth of our faculties be adduced?

Des Cartes' attempt to prove their truth absurd?

Which principle is prior to all in time?

Two characteristics of those principles?

Which is the most convincing argument for the existence of intelligence in others?

The connexion between the countenance and the affections of the mind not entirely derived from experience?

Criteria of first principles repeated?

CHAPTER VI.

FIRST PRINCIPLES OF NECESSARY TRUTHS

I. ABOUT most of the *first principles of necessary truths* there has been no dispute, and therefore it is the less necessary to dwell upon them. It will be sufficient to divide them into different classes; to mention some, by way of specimen, in each class; and to make some remarks on those of which the truth has been called in question.

They may, I think, most properly be divided according to the sciences to which they belong.

☞ 1. There are some first principles that may be called *grammatical;* such as, that every adjective in a sentence must belong to some substantive expressed or understood; that every complete sentence must have a verb.

Those who have attended to the structure of language, and formed distinct notions of the nature and use of the various parts of speech, perceive, without reasoning, that these, and many other such principles, are necessarily true.

☞ 2. There are *logical* axioms; such as, that any contexture of words which does not make a proposition, is neither true nor

false; that every proposition is either true or false; that no proposition can be both true and false at the same time; that reasoning in a circle proves nothing; that whatever may be truly affirmed of a genus, may be truly affirmed of all the species, and all the individuals belonging to that genus.

☞ 3. Every one knows there are *mathematical* axioms. Mathematicians have, from the days of Euclid, very wisely laid down the axioms or first principles on which they reason. And the effect which this appears to have had upon the stability and happy progress of this science, gives no small encouragement to attempt to lay the foundation of other sciences in a similar manner, as far as we are able.

II. *Hume impugns mathematical evidence.*—Mr. Hume hath discovered, as he apprehends, a weak side, even in mathematical axioms; and thinks, that it is not strictly true, for instance, that two right lines can cut one another in one point only.

[The principle he reasons from is, That every simple idea is a copy of a preceding impression; and therefore, in its precision and accuracy, can never go beyond its original. From which he reasons in this manner: no man ever saw or felt a line so straight, that it might not cut another, equally straight, in two or more points. Therefore there can be no idea of such a line.]

The ideas that are most essential to geometry, such as, those of equality, of a straight line, and of a square surface, are far, he says, from being distinct and determinate; and the definitions destroy the pretended demonstrations. Thus, mathematical demonstration is found to be a rope of sand.

III. *This objection answered.*—[I agree with this acute author, that, if we could form no notion of points, lines, and surfaces, more accurate than those we see and handle, there could be no mathematical demonstration.

But every man that has understanding, by *analyzing*, by *abstracting*, and *compounding* the rude materials exhibited by his senses, can fabricate, in his own mind, those elegant and accurate forms of mathematical lines, surfaces, and solids.]

If a man finds himself incapable of forming a precise and determinate notion of the figure which mathematicians call a cube, he not only is no mathematician, but is incapable of being one. But, if he has a precise and determinate notion of that figure, he must perceive, that it is terminated by six mathematical surfaces, perfectly square, and perfectly equal. He must perceive, that these surfaces are terminated by twelve mathematical lines, perfectly straight, and perfectly equal, and that those lines are terminated by eight mathematical points.

When a man is conscious of having these conceptions distinct and determinate, as every mathematician is, it is in vain to bring metaphysical arguments to convince him that they are

not distinct. You may as well bring arguments to convince a man racked with pain, that he feels no pain.

Every theory that is inconsistent with our having accurate notions of mathematical lines, surfaces, and solids, must be false. Therefore it follows, that they are not copies of our impressions.

The Medicean Venus is not a copy of the block of marble from which it was made. It is true, that the elegant statue was formed out of the rude block, and that too by a manual operation, which, in a literal sense, we may call abstraction. Mathematical notions are formed in the understanding by an abstraction of another kind, out of the rude perceptions of our senses.

As the truths of natural philosophy are not necessary truths, but contingent, depending upon the will of the Maker of the world, the principles from which they are deduced must be of the same nature, and therefore belong not to this class.

☞ 4. I think there are axioms, even in matters of *taste*. Notwithstanding the variety found among men, in taste, there are, I apprehend, some common principles, even in matters of this kind. I never heard of any man who thought it a beauty in a human face to want a nose, or an eye, or to have the mouth on one side. How many ages have passed since the days of Homer? Yet, in this long tract of ages, there never was found a man who took Thersites for a beauty.

The *fine arts* are very properly called the *arts of taste*, because the principles of both are the same; and in the fine arts, we find no less agreement among those who practise them than among other artists.

No work of taste can be either relished or understood by those who do not agree with the author in the principles of taste.

Homer, and Virgil, and Shakspeare, and Milton, had the same taste; and all men who have been acquainted with their writings, and agree in the admiration of them, must have the same taste.

The fundamental rules of poetry and music and painting, and dramatic action and eloquence, have been always the same, and will be so to the end of the world.

The variety we find among men in matters of taste is easily accounted for, consistently with what we have advanced.

There is a taste that is acquired, and a taste that is natural. This holds with respect both to the external sense of taste and the internal. Habit and fashion have a powerful influence upon both.

Of tastes that are natural, there are some that may be called rational, others that are merely animal.

Children are delighted with brilliant and gaudy colours, with

romping and noisy mirth, with feats of agility, strength, or cunning; and savages have much the same taste as children.

But there are tastes that are more intellectual. It is the dictate of our rational nature, that love and admiration are misplaced when there is no intrinsic worth in the object.

In those operations of taste which are rational, we judge of the real worth and excellence of the object, and our love or admiration is guided by that judgment. In such operations there is judgment as well as feeling, and the feeling depends upon the judgment we form of the object.

I do not maintain that taste, so far as it is acquired, or so far as it is merely animal, can be reduced to principles. But as far as it is founded on judgment, it certainly may.

The virtues, the graces, the muses, have a beauty that is intrinsic. It lies not in the feelings of the spectator, but in the real excellence of the object. If we do not perceive their beauty, it is owing to the defect or to the perversion of our faculties.

And as there is an original beauty in certain moral and intellectual qualities, so there is a borrowed and derived beauty in the natural signs and expressions of such qualities.

The features of the human face, the modulations of the voice, and the proportions, attitudes, and gesture of the body, are all natural expressions of good or bad qualities of the person, and derive a beauty or a deformity from the qualities which they express.

Works of art express some quality of the artist, and often derive an additional beauty from their utility or fitness for their end.

Of such things there are some that ought to please, and others that ought to displease. If they do not, it is owing to some defect in the spectator. But what has real excellence will always please those who have a correct judgment and a sound heart.

The sum of what has been said upon this subject is, that, setting aside the tastes which men acquire by habit and fashion, there is a natural taste, which is partly animal, and partly rational. With regard to the first, all we can say is, that the Author of Nature, for wise reasons, has formed us so as to receive pleasure from the contemplation of certain objects, and disgust from others, before we are capable of perceiving any real excellence in one, or defect in the other. But that taste which we may call rational, is that part of our constitution by which we are made to receive pleasure from the contemplation of what we conceive to be excellent in its kind, the pleasure being annexed to this judgment, and regulated by it. This taste may be true or false, according as it is founded on a true or false judgment. And if it may be true or false, it must have first principles.

☞ 5. There are also first principles in *morals*.

That an unjust action has more demerit than an ungenerous one; that a generous action has more merit than a merely just one; that no man ought to be blamed for what it was not in his power to hinder; that we ought not to do to others what we would think unjust or unfair to be done to us in like circumstances: these are moral axioms, and many others might be named which appear to me to have no less evidence than those of mathematics.

IV. *Objection to ethical axioms answered.*—[Some perhaps may think, that our determinations, either in matters of taste or in morals, ought not to be accounted necessary truths; that they are grounded upon the constitution of that faculty which we call taste, and of that which we call the moral sense or conscience; which faculties might have been so constituted as to have given determinations different, or even contrary to those they now give;] that as there is nothing sweet or bitter in itself, but according as it agrees or disagrees with the external sense called taste; so there is nothing beautiful or ugly in itself, but according as it agrees or disagrees with the internal sense, which we also call taste; and nothing morally good or ill in itself, but according as it agrees or disagrees with our moral sense.

This indeed is a system, with regard to morals and taste, which hath been supported in modern times by great authorities. And if this system be true, the consequence must be, that there can be no principles, either of taste or of morals, that are necessary truths. For, according to this system, all our determinations, both with regard to matters of taste, and with regard to morals, are reduced to matters of fact. I mean to such as these, that by our constitution we have on such occasions certain agreeable feelings, and on other occasions certain disagreeable feelings.

But I cannot help being of a contrary opinion, being persuaded, that a man who determined that polite behaviour has great deformity, and that there is a great beauty in rudeness and ill breeding, would judge wrong whatever his feelings were.

In like manner, I cannot help thinking, that a man who determined that there is more moral worth in cruelty, perfidy, and injustice, than in generosity, justice, prudence, and temperance, would judge wrong whatever his constitution was.

V. *First principles of morals and taste necessary truths.*—[And if it be true *that there is judgment* in our determinations of taste and of morals, it must be granted, that what is true or false in morals, or in matters of taste, is *necessarily so*. For this reason, I have ranked the first principles of morals and of taste under the class of necessary truths.]

☞ 6. The last class of first principles I shall mention, we may call *metaphysical*.

I shall particularly consider *three* of these, because they have been called in question by Mr. Hume.

[The *first* is, That the qualities which we perceive by our senses must have a subject, which we call body, and that the thoughts we are conscious of must have a subject, which we call mind.]

VI. *Difficulty in admitting the first metaphysical principle.*— It is not more evident that two and two make four, than it is that figure cannot exist, unless there be something that is figured, nor motion without something that is moved. I not only perceive figure and motion, but I perceive them to be qualities: they have a necessary relation to something in which they exist as their subject. [The difficulty which some philosophers have found in admitting this, is entirely owing to the theory of ideas. A subject of the sensible qualities which we perceive by our senses, is not an idea either of sensation or of consciousness; therefore, say they, we have no such idea. Or, in the style of Mr. Hume, from what impression is the idea of substance derived? It is not a copy of any impression; therefore there is no such idea.]

The distinction between sensible qualities, and the substance to which they belong, and between thought, and the mind that thinks, is not the invention of philosophers; it is found in the structure of all languages, and therefore must be common to all men who speak with understanding. And I believe no man, however sceptical he may be in speculation, can talk on the common affairs of life for half an hour, without saying things that imply his belief of the reality of these distinctions.

Mr. Locke acknowledges, "That we cannot conceive how simple ideas of sensible qualities should subsist alone; and therefore we suppose them to exist in, and to be supported by, some common subject." In his Essay, indeed, some of his expressions seem to leave it dubious, whether this belief, that sensible qualities must have a subject, be a true judgment, or a vulgar prejudice. But in his first letter to the Bishop of Worcester, he removes this doubt, and quotes many passages of his Essay, to show that he neither denied nor doubted of the existence of substances, both thinking and material; and that he believed their existence on the same ground the Bishop did, to wit, "on the repugnancy to our conceptions, that modes and accidents should subsist by themselves." He offers no proof of this repugnancy; nor, I think, can any proof of it be given, because it is a first principle.

It were to be wished that Mr. Locke, who inquired so accurately and so laudably into the origin, certainty, and extent of human knowledge, had turned his attention more particularly to the origin of these two opinions which he firmly believed; to

wit, that sensible qualities must have a subject which we call body, and that thought must have a subject which we call mind. [A due attention to these two opinions which govern the belief of all men, even of sceptics in the practice of life, would probably have led him to perceive, that sensation and consciousness are not the only sources of human knowledge; and that there are principles of belief in human nature, of which we can give no other account *but that they necessarily result from the constitution of our faculties;* and that if it were in our power to throw off their influence upon our practice and conduct, we could neither speak nor act like reasonable men.]

We cannot give a reason why we believe even our sensations to be real and not fallacious; why we believe what we are conscious of; why we trust any of our natural faculties. We say, it must be so, it cannot be otherwise. This expresses only a strong belief, which is indeed the voice of nature, and which therefore in vain we attempt to resist. But if, in spite of nature, we resolve to go deeper, and not to trust our faculties, without a reason to show that they cannot be fallacious, I am afraid, that seeking to become wise, and to be as gods, we shall become foolish, and being unsatisfied with the lot of humanity, we shall throw off common sense.

[The *second* metaphysical principle I mention is, that whatever begins to exist, must have a cause which produced it.]

VII. *The scepticism of Hume has benefited philosophy.*—[Philosophy is indebted to Mr. Hume in this respect among others, that, by calling in question many of the first principles of human knowledge, he hath put speculative men upon inquiring more carefully than was done before, into the nature of the evidence upon which they rest.] Truth can never suffer by a fair inquiry; it can bear to be seen naked and in the fullest light; and the strictest examination will always turn out, in the issue, to its advantage. I believe Mr. Hume was the first who ever called in question whether things that begin to exist must have a cause.

VIII. *Origin of the second metaphysical axiom threefold.*—With regard to this point, we must hold one of these three things; either that *first*, it is an opinion, for which we have no evidence, and which men have foolishly taken up without ground; or, *secondly*, that it is capable of direct proof by argument; or, *thirdly*, that it is self-evident, and needs no proof, but ought to be received as an axiom, which cannot by reasonable men be called in question.

[The first of these suppositions would put an end to all philosophy, to all religion, to all reasoning that would carry us beyond the objects of sense, and to all prudence in the conduct of life.]

As to the second supposition, that this principle may be proved

by direct reasoning, I am afraid we shall find the proof extremely difficult, if not altogether impossible.

I know only of three or four arguments that have been urged by philosophers, in the way of abstract reasoning, to prove, that things which begin to exist must have a cause.

One is offered by Mr. Hobbes, another by Dr. Samuel Clarke, another by Mr. Locke. Mr. Hume, in his "Treatise of Human Nature," has examined them all; and, in my opinion, has shown, that they take for granted the thing to be proved; a kind of false reasoning, which men are very apt to fall into when they attempt to prove what is self-evident.

IX. *It is not derived from experience.*—[It has been thought, that, although this principle does not admit of proof from *abstract reasoning*, it may be proved from *experience*, and may be justly drawn by *induction* from instances that fall within our observations.]

I conceive this method of proof will leave us in great uncertainty, for these three reasons:

[*First*, because the proposition to be proved is not a contingent but a necessary proposition. It is not, that things which begin to exist commonly have a cause, or even that they always in fact have a cause; but that they *must* have a cause, and cannot begin to exist without a cause.]

Propositions of this kind, from their nature, are incapable of proof by induction. Experience informs us only of what is or has been, not of what must be; and the conclusion must be of the same nature with the premises.

For this reason, no mathematical proposition can be proved by induction. Though it should be found by experience in a thousand cases, that the area of a plane triangle is equal to the rectangle under the altitude and half the base, this would not prove that it must be so in all cases, and cannot be otherwise: which is what the mathematician affirms.

In like manner, though we had the most ample experimental proof, that things which have begun to exist had a cause, this would not prove that they must have a cause. Experience may show us what is the established course of nature, but can never show what connexions of things are in their nature necessary.

[*Secondly*, General maxims, grounded on experience, have only a degree of probability proportioned to the extent of our experience, and ought always to be understood *so as to leave room for exceptions*, if future experience shall discover any such.]

The law of gravitation has as full a proof from experience and induction as any principle can be supposed to have. Yet if any philosopher should, by clear experiment, show that there is a kind of matter in some bodies which does not gravitate, the law of gravitation ought to be limited by that exception.

Now it is evident, that men have never considered the principle of the necessity of causes, ☞ as a truth of this kind *which may admit of limitation or exception:* and therefore it has not been received upon this kind of evidence.

[*Thirdly*, I do not see that experience could satisfy us that every change in nature actually has a cause.

In the far greatest part of the changes in nature that fall within our observation, *the causes are unknown*, and therefore, from experience, we cannot know whether they have causes or not.

Causation is not an object of sense. The only experience we can have of it, is in the consciousness we have of exerting some power in ordering our thoughts and actions. But *this experience is surely too narrow a foundation for a general conclusion*, that all things that have had or shall have a beginning, must have a cause.]

For these reasons, this principle cannot be drawn from *experience*, any more than from abstract reasoning.

[The *third* supposition is, that it is to be admitted as a first or self-evident principle. Two reasons may be urged for this.

First, The universal consent of mankind, not of philosophers only, but of the rude and unlearned vulgar.]

Mr. Hume, as far as I know, was the first that ever expressed any doubt of this principle. And when we consider that he has rejected every principle of human knowledge, excepting that of consciousness, and has not even spared the axioms of mathematics, his authority is of small weight.

Indeed, with regard to first principles, there is no reason why the opinion of a philosopher should have more authority than that of another man of common sense, who has been accustomed to judge in such cases. The illiterate vulgar are competent judges; and the philosopher has no prerogative in matters of this kind: but he is more liable than they to be misled by a favourite system, especially if it is his own.

X. *The supposition of a first cause universal.*—[Setting aside the authority of Mr. Hume, what has philosophy been employed in, since men first began to philosophise, *but in the investigation of the causes of things?* This it has always professed, when we trace it to its cradle. It never entered into any man's thought, before the philosopher we have mentioned, to put the previous question, Whether things have a cause or not? Had it been thought possible that they might not, it may be presumed, that, in the variety of absurd and contradictory causes assigned, some one would have had recourse to this hypothesis.]

☞ They could conceive the world to arise from an egg, from a struggle between love and strife, between moisture and drought,

between heat and cold; but they never supposed that it had no cause. ☞ We know not any atheistic sect that ever had recourse to this topic, though by it they might have evaded every argument that could be brought against them, and answered all objections to their system.

But rather than adopt such an absurdity, they contrived some imaginary cause; such as chance, a concourse of atoms, or necessity, as the cause of the universe.

XI. *Cicero, although an Academic, assented to this universal belief.*—The accounts which philosophers have given of particular phenomena, as well as of the universe in general, proceed upon the same principle. That every phenomenon must have a cause, was always taken for granted. ☞ "Nil turpius physico," says Cicero, "quam fieri sine causa quicquam dicere." Though an Academic, he was dogmatical in this. ☞ And Plato, the father of the Academy, was no less so. ☞ "Πάντι γὰρ ἀδύνατον χωρὶς αἴτιου γένεσιν ἔχειν."—Timæus. It is impossible that any thing should have its origin without a cause.

I believe Mr. Hume was the first who ever held the contrary. This, indeed, he avows, and assumes the honour of the discovery. "It is," says he, "a maxim in philosophy, that whatever begins to exist, must have a cause of existence. This is commonly taken for granted in all reasonings, without any proof given or demanded. It is supposed to be founded on intuition, and to be one of those maxims, which, though they may be denied with the lips, it is impossible for men in their hearts really to doubt of. But, if we examine this maxim by the idea of knowledge, above explained, we shall discover in it no mark of such intuitive certainty." The meaning of this seems to be, that it did not suit with his theory of intuitive certainty, and therefore he excludes it from that privilege.

[The vulgar adhere to this maxim as firmly and universally as the philosophers. Their superstitions have the same origin as the systems of philosophers, to wit, a desire to know the causes of things. "Felix qui potuit rerum cognoscere causas," is the universal sense of men; but to say that any thing can happen without a cause, shocks the common sense of a savage.]

XII. *Hume not bound to assign a cause for his dissent.*—This universal belief of mankind is easily accounted for, if we allow that the necessity of a cause of every event is obvious to the rational powers of a man. But it is impossible to account for it otherwise. It cannot be ascribed to education, to systems of philosophy, or to priestcraft. [One would think, that a philosopher who takes it to be a general delusion or prejudice, would endeavour to show from what causes in human nature such a general error may take its rise. ☞ But I forget that Mr. Hume might answer upon his own principles, that since things may

happen without a cause, this error and delusion of men may be universal *without any cause.*]

[A second reason why I conceive this to be a first principle, is, that mankind not only assent to it in *speculation*, but that the *practice of life* is grounded upon it in the most important matters, even in cases where experience leaves us doubtful; and it is impossible to act with common prudence if we set it aside.]

In great families there are so many bad things done by a certain personage called *no body*, that it is proverbial, that there is a no body about every house who does a great deal of mischief; and even where there is the exactest inspection and government, many events will happen of which no other author can be found: so that, if we trust merely to experience in this matter, *no body* will be found to be a very active person, and to have no inconsiderable share in the management of affairs. But whatever countenance this system may have from experience, it is too shocking to common sense to impose upon the most ignorant. A child knows, that when his top, or any of his play-things are taken away, it must be done by somebody. Perhaps it would not be difficult to persuade him that it was done by some invisible being, but that it should be done by *no body* he cannot believe.

Suppose a man's house to be broke open, his money and jewels taken away. Such things have happened times innumerable without any apparent cause; and were he only to reason from experience in such a case, how must he behave? He must put in one scale the instances wherein a cause was found of such an event, and in the other scale, the instances where no cause was found, and the preponderant scale must determine, whether it be most probable that there was a cause of this event, or that there was none. Would any man of common understanding have recourse to such an expedient to direct his judgment?

☞ Suppose a man to be found dead on the highway, his skull fractured, his body pierced with deadly wounds, his watch and money carried off. The coroner's jury sits upon the body, and the question is put, what was the cause of this man's death, was it accident, or felo de se, or murder by persons unknown? Let us suppose an adept in Mr. Hume's philosophy to make one of the jury, and that he insists upon the previous question, whether there was any cause of the event; or whether it happened without a cause?

Surely, upon Mr. Hume's principles, a great deal might be said upon this point; and, if the matter is to be determined by past experience, it is dubious on which side the weight of argument might stand. But we may venture to say, that, if Mr. Hume had been of such a jury, he would have laid aside his philosophical principles, and acted according to the dictates of common prudence.

XIII. *The necessity of causes admitted inadvertently, in the "Treatise of Human Nature."*—Many passages might be produced, even in Mr. Hume's philosophical writings, in which he, unawares, betrays the same inward conviction of the necessity of causes, which is common to other men. I shall mention only one, in the "Treatise of Human Nature," and in that part of it where he combats this very principle. ["As to those impressions," says he, "which arise from the senses, their ultimate cause is, in my opinion, perfectly inexplicable by human reason; and it will always be impossible to decide with certainty, (1) whether they arise immediately from the object, or (2) are produced by the creative power of the mind, or (3) are derived from the Author of our being."

Among these alternatives, he never thought of their not arising from any cause.]

XIV. *A fourth cause of impressions might have been added by Hume.*—The arguments which Mr. Hume offers, to prove that this is not a self-evident principle, are three. [*First,* That all certainty arises from a comparison of ideas, and a discovery of their unalterable relations, none of which relations imply this proposition, that whatever has a beginning must have a cause of existence. This theory of certainty has been examined before, in chap. iii. of this Essay.]

☞ The *second* argument is, That whatever we can conceive is possible. This has likewise been examined.

☞ The *third* argument is, That what we call a cause, is only something antecedent to, and always conjoined with the effect. This is also one of Mr. Hume's peculiar doctrines, which we may have occasion to consider afterwards. ☞ It is sufficient here to observe, that we may learn from it that night is the cause of day, and day the cause of night: for no two things have more constantly followed each other since the beginning of the world.

[The *last* metaphysical principle I mention, which is opposed by the same author, is, that design, and intelligence in the cause, may be inferred, with certainty, from marks or signs of it in the effect.]

Intelligence, design, and skill, are not objects of the external senses, nor can we be conscious of them in any person but ourselves. Even in ourselves, we cannot, with propriety, be said to be conscious of the natural or acquired talents we possess. We are conscious only of the operations of mind in which they are exerted. Indeed, a man comes to know his own mental abilities, just as he knows another man's, by the *effects* they produce, when there is occasion to put them to exercise.

A man's wisdom is known to us only by the signs of it in his conduct: his eloquence by the signs of it in his speech. In the

same manner we judge of his virtue, of his fortitude, and of all his talents and qualities of mind.

Yet it is to be observed, that we judge of men's talents with as little doubt or hesitation as we judge of the immediate objects of sense.

One person, we are sure, is a perfect idiot; another who feigns idiotism to screen himself from punishment, is found upon trial to have the understanding of a man, and to be accountable for his conduct. We perceive one man to be open, another cunning; one to be ignorant, another very knowing; one to be slow of understanding, another quick. Every man forms such judgments of those he converses with; and the common affairs of life depend upon such judgments. We can as little avoid them as we can avoid seeing what is before our eyes.

From this it appears, that it is no less a part of the human constitution, to judge of men's characters, and of their intellectual powers, from the signs of them in their actions and discourse, than to judge of corporeal objects by our senses: that such judgments are common to the whole human race that are endowed with understanding; and that they are absolutely necessary in the conduct of life.

Now, every judgment of this kind we form, is only a particular application of the general principle, that intelligence, wisdom, and other mental qualities in the cause, may be inferred from their marks or signs in the effect.

The actions and discourses of men are effects, of which the actors and speakers are the causes. The effects are perceived by our senses; but the causes are behind the scene. We only conclude their existence and their degrees from our observation of the effects.

From wise conduct we infer wisdom in the cause; from brave actions we infer courage; and so in other cases.

This inference is made with perfect security by all men. We cannot avoid it; it is necessary in the ordinary conduct of life; it has therefore the strongest marks of being a first principle.

XV. *The last metaphysical principle derived neither from reasoning nor from experience.*—Perhaps some may think, that this principle may be learned either by (1) *reasoning*, or by (2) *experience*, and therefore that there is no ground to think it a first principle.

If it can be shown to be got by reasoning, by all, or the greater part of those who are governed by it, I shall very readily acknowledge that it ought not to be esteemed a first principle. But I apprehend the contrary appears from very convincing arguments.

☞ *First*, the principle is too universal to be the effect of reasoning. It is common to philosophers and to the vulgar; to the learned and the most illiterate; to the civilized and to the savage:

and of those who are governed by it, not one in ten thousand can give a reason for it.

☞ *Secondly*, we find philosophers, ancient and modern, who can reason excellently on subjects that admit of reasoning, when they have occasion to defend this principle, not offering reasons for it, or any *medium* of proof, but appealing to the common sense of mankind; mentioning particular instances, to make the absurdity of the contrary opinion more apparent, and sometimes using the weapons of wit and ridicule, which are very proper weapons for refuting absurdities, but altogether improper in points that are to be determined by reasoning.

To confirm this observation, I shall quote two authors, an ancient and a modern, who have more expressly undertaken the defence of this principle, than any others I remember to have met with, and whose good sense and ability to reason, where reasoning is proper, will not be doubted.

XVI. The first is Cicero, whose words, lib. i. cap. 13, "De Divinatione," may be thus translated:

"Can any thing done by chance have all the marks of design? Four dice may, by chance, turn up four aces; but do you think that four hundred dice, thrown by chance, will turn up four hundred aces? Colours thrown upon canvass without design may have some similitude to a human face; but do you think they might make as beautiful a picture as that of the Coan Venus? A hog turning up the ground with his nose may make something of the form of the letter A; but do you think that a hog might describe on the ground the 'Andromache' of Ennius? Carneades imagined, that in the stone quarries at Chios he found, in a stone that was split, a representation of the head of a little Pan, or sylvan deity. I believe he might find a figure not unlike; but surely not such a one as you would say had been formed by an excellent sculptor like Scopas. For so, verily, the case is, that chance never perfectly imitates design." Thus Cicero.

Now, in all this discourse, I see very good sense, and what is apt to convince every unprejudiced mind; but I see not in the whole a single step of reasoning. It is barely an appeal to every man's common sense.

XVII. Let us next see how the same point is handled by the excellent Archbishop Tillotson, 1st Sermon, vol. i.

"For I appeal to any man of reason, whether any thing can be more unreasonable, than obstinately to impute an effect to chance which carries on the face of it all the arguments and characters of design? Was ever any considerable work, in which there was required a great variety of parts, and an orderly and regular adjustment of these parts, done by chance? Will chance fit means to ends, and that in ten thousand instances, and not fail in any one? How often might a man, after he had jumbled

a set of letters in a bag, fling them out upon the ground before they would fall into an exact poem, yea, or so much as make a good discourse in prose? And may not a little book be as easily made as this great volume of the world? How long might a man sprinkle colours upon canvass with a careless hand before they would make the exact picture of a man? And is a man easier made by chance than his picture? How long might twenty thousand blind men, which should be sent out from the remote parts of England, wander up and down before they would all meet upon Salisbury plains, and fall into rank and file in the exact order of an army? And yet this is much more easy to be imagined than how the innumerable blind parts of matter should rendezvous themselves into a world. A man that sees Henry the Seventh's chapel at Westminster might with as good reason maintain, (yea, and much better, considering the vast difference between that little structure and the huge fabric of the world,) that it was never contrived or built by any man, but that the stones did by chance grow into those curious figures into which we see them to have been cut and graven; and that upon a time, (as tales usually begin,) the materials of that building, the stone, mortar, timber, iron, lead, and glass, happily met together, and very fortunately ranged themselves into that delicate order in which we see them now so close compacted, that it must be a very great chance that parts them again. What would the world think of a man that should advance such an opinion as this, and write a book for it? If they would do him right, they ought to look upon him as mad. But yet he might maintain this opinion with a little more reason than any man can have to say that the world was made by chance, or that the first men grew out of the earth, as plants do now. For can any thing be more ridiculous and against all reason, than to ascribe the production of men to the first fruitfulness of the earth, without so much as one instance or experiment in any age or history to countenance so monstrous a supposition? The thing is at first sight so gross and palpable, that no discourse about it can make it more apparent. And yet these shameful beggars of principles, who give this precarious account of the original of things, assume to themselves to be the men of reason, the great wits of the world, the only cautious and wary persons, who hate to be imposed upon, that must have convincing evidence for every thing, and can admit nothing without a clear demonstration for it."

In this passage, the excellent author takes what I conceive to be the proper method of refuting an absurdity, by exposing it in different lights, in which every man of common understanding perceives it to be ridiculous. And although there is much good sense, as well as wit, in the passage I have quoted, I cannot find one *medium* of proof in the whole.

XVIII. *The argument drawn from mathematics to support this principle, is fallacious.*—[I have met with one or two respectable authors who draw an argument from the doctrine of chances, to show how improbable it is that a regular arrangement of parts should be the effect of chance, or that it should not be the effect of design.

I do not object to this reasoning; but I would observe, that the doctrine of chances is a branch of mathematics little more than a hundred years old. *But the conclusion drawn from it has been held by all men from the beginning of the world.* It cannot, therefore, be thought, that men have been led to this conclusion by that reasoning.] Indeed, it may be doubted whether the first principle upon which all the mathematical reasoning about chances is grounded, is more self-evident than this conclusion drawn from it, or whether it is not a particular instance of that general conclusion.

We are next to consider whether we may not learn this truth from *experience*, that effects which have all the marks and tokens of design must proceed from a designing cause.

I apprehend that we cannot learn this truth from experience, for two reasons.

☞ *First*, Because it is a necessary truth, not a contingent one. It agrees with the experience of mankind since the beginning of the world, that the area of a triangle is equal to half the rectangle under its base and perpendicular. It agrees no less with experience, that the sun rises in the east and sets in the west. So far as experience goes, these truths are upon an equal footing. But every man perceives this distinction between them, that the first is a necessary truth, and that it is impossible it should not be true; but the last is not necessary, but contingent, depending upon the will of Him who made the world. As we cannot learn from experience that twice three must necessarily make six, so neither can we learn from experience that certain effects must proceed from a designing and intelligent cause. Experience informs us only of what has been, but never of what must be.

[*Secondly*, It may be observed, that experience can show a connexion between a sign, and the thing signified by it, in those cases only, where *both the sign and thing signified are perceived*, and have always been perceived in conjunction. But if there be any case where the sign only is perceived, experience can never show its connexion with the thing signified.] Thus, for example, thought is a sign of a thinking principle or mind. But how do we know that thought cannot be without a mind? If any man should say that he knows this by experience, he deceives himself. It is impossible he can have any experience of this; because, though we have an immediate knowledge of the existence

of thought in ourselves by consciousness, yet we have no immediate knowledge of a mind. The mind is not an immediate object either of sense or of consciousness. We may therefore justly conclude, that the necessary connexion between thought and a mind, or thinking being, is not learned from experience.

The same reasoning may be applied to the connexion between a work excellently fitted for some purpose, and design in the author or cause of that work. One of these, to wit, the work, may be an immediate object of perception. But the design and purpose of the author cannot be an immediate object of perception; and therefore experience can never inform us of any connexion between the one and the other, far less of a necessary connexion.

[Thus I think it appears, that the principle we have been considering, to wit, that from certain signs or indications in the effect, we may infer, that there must have been intelligence, wisdom, or other intellectual or moral qualities in the cause, is a principle which we get, neither by reasoning nor by experience; and therefore, if it be a true principle, it must be a first principle. There is in the human understanding a light, by which we see immediately the evidence of it, when there is occasion to apply it.]

Of how great importance this principle is in common life, we have already observed. And I need hardly mention its importance in natural theology.

IX. *The existence of a Deity proved more incontrovertibly from this principle, than any other that reason has advanced.*—[The clear marks and signatures of wisdom, power, and goodness, in the constitution and government of the world, is, of all arguments that have been advanced for the being and providence of the Deity, that which in all ages has made the strongest impression upon candid and thinking minds; an argument, which has this peculiar advantage, that it gathers strength as human knowledge advances, and is more convincing at present than it was some centuries ago.]

☞ King Alphonsus might say, that he could contrive a better planetary system than that which astronomers held in his day. That system was not the work of God, but the fiction of men.

But since the true system of the sun, moon, and planets, has been discovered, no man, however atheistically disposed, has pretended to show how a better could be contrived.

When we attend to the marks of good contrivance which appear in the works of God, every discovery we make in the constitution of the material or intellectual system becomes a hymn of praise to the great Creator and Governor of the world. And a man who is possessed of the genuine spirit of philosophy will think it impiety to contaminate the divine workmanship, by

mixing it with those fictions of human fancy, called theories and hypotheses, which will always bear the signatures of human folly, no less than the other does of divine wisdom.

I know of no person who ever called in question the principle now under our consideration, when it is applied to the actions and discourses of men: for this would be to deny that we have any means of discerning a wise man from an idiot, or a man that is illiterate in the highest degree from a man of knowledge and learning, which no man has the effrontery to deny.

X. *Argument for the existence of a Deity from final causes.*—But, in all ages, those who have been unfriendly to the principles of religion, have made attempts to weaken the force of the argument for the existence and perfections of the Deity, which is founded on this principle. That argument has got the name of the *argument from final causes;* and as the meaning of this name is well understood, we shall use it.

XI. *Reduced to a syllogistic form.*—[*The argument from final causes*, when *reduced to a syllogism*, has these two premises: *First,* That design and intelligence in the cause, may, with certainty, be inferred from marks or signs of it in the effect. This is the principle we have been considering, and we may call it the *major* proposition of the argument. The *second*, which we call the *minor* proposition, is, That there are in fact the clearest marks of design and wisdom in the works of nature; and the conclusion is, that the works of nature are the effects of a wise and intelligent cause. One must either assent to the conclusion, or deny one or other of the premises.]

[Those among the ancients who denied a God or a providence, seem to me to have yielded the major proposition, and to have denied the minor; conceiving that there are not in the constitution of things such marks of wise contrivance as are sufficient to put the conclusion beyond doubt. This, I think, we may learn, from the reasoning of Cotta the Academic, in the third book of Cicero, of the "Nature of the Gods."]

The gradual advancement made in the knowledge of nature hath put this opinion quite out of countenance.

☞ When the structure of the human body was much less known than it is now, the famous Galen saw such evident marks of wise contrivance in it, that though he had been educated an Epicurean, he renounced that system, and wrote his book of the use of the parts of the human body, on purpose to convince others of what appeared so clear to himself, that it was impossible that such admirable contrivance should be the effect of chance.

Those, therefore, of later times, who are dissatisfied with this argument from final causes, have quitted the strong hold of the ancient atheists, which had become untenable, and have chosen rather to make a defence against the major proposition.

XII. *The major premise rejected by modern atheists and others.*—[Des Cartes seems to have led the way in this, though he was no atheist. But, (1) having invented some new arguments for the being of God, he was perhaps led to disparage those that had been used before, that he might bring more credit to his own. Or (2) perhaps he was offended with the Peripatetics, because they often mixed final causes with physical, in order to account for the phenomena of nature.]

[He maintained therefore that *physical* causes only should be assigned for phenomena; that the philosopher has nothing to do with final causes; and that it is presumption in us to pretend to determine for what end any work of nature is framed.] Some of those who were great admirers of Des Cartes, and followed him in many points, differed from him in this, particularly Dr. Henry More and the pious Archbishop Fenelon: but others, after the example of Des Cartes, have shown a contempt of all reasoning from final causes. Among these, I think, we may reckon Maupertuis and Buffon. But the most direct attack has been made upon this principle by Mr. Hume, who puts an argument in the mouth of an Epicurean, on which he seems to lay great stress.

XIII. *Hume joins the atheists of latter times.*—[The argument is, That the universe is a singular effect, and therefore we can draw no conclusion from it, whether it may have been made by wisdom or not.

If I understand the force of this argument, it amounts to this, That if we had been accustomed to see worlds produced, *some by wisdom and others without it*, and had observed, that such a world as this which we inhabit was always the effect of wisdom, we might then, from past experience, conclude, that this world was made by wisdom; but having no such experience, we have no means of forming any conclusion about it.]

That this is the strength of the argument, appears, because if the marks of wisdom seen in one world be no evidence of wisdom, the like marks seen in ten thousand will give as little evidence, unless, in time past, we perceived *wisdom itself* conjoined with the tokens of it; and, from their perceived conjunction in time past, conclude, that although, in the present world, we see only one of the two, the other must accompany it.

Whence it appears, that this reasoning of Mr. Hume is built on the supposition, that our inferring design from the strongest marks of it, is entirely owing to *our past experience* of having always found these two things conjoined. But I hope I have made it evident that this is not the case. And indeed it is evident, that, according to this reasoning, we can have no evidence of mind or design in any of our fellow-men.

How do I know that any man of my acquaintance has understanding? I never saw his understanding. I see only certain

effects, which my judgment leads me to conclude to be marks and tokens of it.

But, says the sceptical philosopher, you can conclude nothing from these tokens, unless past experience has informed you that such tokens are always joined with understanding. Alas! Sir, it is impossible I can ever have this experience. ☞ The understanding of another man is no immediate object of sight, or of any other faculty which God hath given me; and unless I can conclude its existence from tokens that are visible, I have no evidence that there is understanding in any man.

☞ It seems then, that the man who maintains, that there is no force in the argument from final causes, must, if he will be consistent, see no evidence of the existence of any intelligent being but himself.

QUESTIONS FOR EXAMINATION.

Hume impugns mathematical principles?
His objections answered?
Objection to ethical axioms stated and removed?
What three metaphysical principles does Reid here particularly consider?
An argument against Locke's origin of our ideas?
The necessity of a first cause acknowledged by the ancients?
Why should Hume be excused from assigning the cause of his peculiar belief?
Who does acknowledge this very necessity?
Three causes of impressions alluded to by Hume?
This principle derived neither from reason nor experience?
The argument taken from mathematics is fallacious?
What advantage does the argument for the existence of a Deity, derived from these principles, possess?
The argument from final causes may be reduced to a syllogistic form?
How do the ancient and modern philosophers differ in their treatment of this syllogism?
Hume's objection to this principle?

CHAPTER VII.

OPINIONS ANCIENT AND MODERN ABOUT FIRST PRINCIPLES.

I. I KNOW no writer who has treated expressly of first principles before Aristotle; but it is probable, that, in the ancient Pythagorean school, from which both Plato and Aristotle borrowed much, this subject had not been left untouched.

Before the time of Aristotle, considerable progress had been made in the mathematical sciences, particularly in geometry.

The discovery of the forty-seventh proposition of the first book of Euclid, and of the five regular solids, is, by antiquity, ascribed to Pythagoras himself; and it is impossible he could have made those discoveries without knowing many other propo-

sitions in mathematics. Aristotle mentions the incommensurability of the diagonal of a square to its side, and gives a hint of the manner in which it was demonstrated. We find likewise some of the axioms of geometry mentioned by Aristotle as axioms, and as indemonstrable principles of mathematical reasoning.

It is probable, therefore, that, before the time of Aristotle, there were elementary treatises of geometry, which are now lost; and that in them the axioms were distinguished from the propositions which require proof.

To suppose, that so perfect a system as that of Euclid's Elements was produced by one man, without any preceding model or materials, would be to suppose Euclid more than a man. We ascribe to him as much as the weakness of human understanding will permit, if we suppose that the inventions in geometry, which had been made in a tract of preceding ages, were by him not only carried much further, but digested into so admirable a system, that his work obscured all that went before it, and made them be forgot and lost.

Perhaps, in like manner, the writings of Aristotle with regard to first principles, and with regard to many other abstract subjects, may have occasioned the loss of what had been written upon those subjects by more ancient philosophers.

Whatever may be in this, in his second book upon demonstration he has treated very fully of first principles; and though he has not attempted any enumeration of them, he shows very clearly, that all demonstration must be built upon truths which are evident of themselves, but cannot be demonstrated. His whole doctrine of syllogisms is grounded upon a few axioms, from which he endeavours to demonstrate the rules of syllogism in a mathematical way; and in his topics he points out many of the first principles of probable reasoning.

II. [*As long as the philosophy of Aristotle prevailed,* it *was held as a fixed point, that all proof must* be drawn from *principles already* known and *granted.*]

We must observe, however, that, in that philosophy, many things were assumed as first principles, which have no just claim to that character; such as, that the earth is at rest; that nature abhors a vacuum; that there is no change in the heavens above the sphere of the moon; that the heavenly bodies move in circles, that being the most perfect figure; that bodies do not gravitate in their proper place; and many others.

III. *The spirit of ancient philosophy.*—[The Peripatetic philosophy, therefore, instead of being deficient in first principles, was redundant; instead of rejecting those that are truly such, it adopted, as first principles, many vulgar prejudices and rash judgments: and this seems in general *to have been the spirit of ancient philosophy.*]

It is true, there were, among the ancients, sceptical philosophers who professed to have no principles, and held it to be the greatest virtue in a philosopher to withhold assent, and keep his judgment in a perfect equilibrium between contradictory opinions. But though this sect was defended by some persons of great erudition and acuteness, it died of itself, and the dogmatic philosophy of Aristotle obtained a complete triumph over it.

What Mr. Hume says of those who are sceptical with regard to moral distinctions, seems to have had its accomplishment in the ancient sect of sceptics. "The only way," says he, "of converting antagonists of this kind, is to leave them to themselves; for finding that nobody keeps up the controversy with them, it is probable they will at last of themselves, from mere weariness, come over to the side of common sense and reason."

Setting aside this small sect of the sceptics, which was extinct many ages before the authority of Aristotle declined, I know of no opposition made to first principles among the ancients. The disposition was, as has been observed, not to oppose, but to multiply them beyond measure.

☞ Men have always been prone, when they leave one extreme, to run into the opposite: and this spirit in the ancient philosophy to multiply first principles beyond reason, was a strong presage, that, when the authority of the Peripatetic system was at an end, the next reigning system would diminish their number beyond reason.

This accordingly happened in that great revolution of the philosophical republic brought about by Des Cartes. That truly great reformer in philosophy, cautious to avoid the snare in which Aristotle was taken, of admitting things as first principles too rashly, resolved to doubt of every thing, and to withhold his assent, until it was forced by the clearest evidence.

Thus Des Cartes brought himself into that very state of suspense, which the ancient sceptics recommended as the highest perfection of a wise man, and the only road to tranquillity of mind. But he did not remain long in this state; his doubt did not arise from despair of finding the truth, but from caution, that he might not be imposed upon, and embrace a cloud instead of a goddess.

His very doubting convinced him of his own existence; for that which does not exist, can neither doubt, nor believe, nor reason.

IV. *Enthymeme of Des Cartes.*—Thus he emerged from universal scepticism by this short enthymeme, *cogito, ergo sum.*

This enthymeme consists of an antecedent proposition, *I think,* and a conclusion drawn from it, *therefore I exist.*

If it should be asked, how Des Cartes came to be certain of the antecedent proposition, it is evident, that for this he trusted

to the testimony of consciousness. He was conscious that he thought, and needed no other argument.

[So that the first principle which he adopts in this famous enthymeme is this, That those doubts, and thoughts, and reasonings, of which he was conscious, did certainly exist, and that his consciousness put their existence beyond all doubt.]

V. *Des Cartes' first principle liable to objection.*—[It might have been objected to this first principle of Des Cartes, how do you know that your consciousness cannot deceive you? You have supposed, that all you see, and hear, and handle, may be an illusion. Why therefore should the power of consciousness have this prerogative, to be believed implicitly, when all our other powers are supposed fallacious?]

To this objection, I know no other answer that can be made, but that we find it impossible to doubt of things of which we are conscious. The constitution of our nature forces this belief upon us irresistibly.

This is true, and is sufficient to justify Des Cartes, in assuming, as a first principle, the existence of thought, of which he was conscious.

He ought, however, to have gone further in this track, and to have considered whether there may not be other first principles which ought to be adopted for the same reason. But he did not see this to be necessary, conceiving that, upon this one first principle, he could support the whole fabric of human knowledge.

VI. *Des Cartes has assumed two principles in his enthymeme.*—[To proceed to the conclusion of Des Cartes' enthymeme. From the existence of his thought he infers his own existence. Here he assumes *another first principle,* not a contingent, but a necessary one; to wit, that where there is thought, there must be a thinking being or mind.]

Having thus established his own existence, he proceeds to prove the existence of a supreme and infinitely perfect being; and, from the perfection of the Deity, he infers that his senses, his memory, and the other faculties which God had given him, are not fallacious.

[Whereas other men, from the beginning of the world, had taken for granted, as a first principle, the truth and reality of what they perceive by their senses, and from thence inferred the existence of a supreme Author and Maker of the world, Des Cartes took a contrary course, conceiving that the testimony of our senses, and of all our faculties, excepting that of consciousness, ought not to be taken for granted, but to be proved by argument.]

☞ Perhaps some may think that Des Cartes meant only to admit no other first principle of *contingent* truths besides that of

consciousness; but that he allowed the axioms of mathematics, and of other necessary truths, to be received without proof.

VII. *He denies the truth of mathematical axioms, and rejects necessary truths.*—[But I apprehend this was not his intention. For the truth of mathematical axioms must depend upon the truth of the faculty by which we judge of them. If the faculty be fallacious, we may be deceived by trusting to it. Therefore, as he supposes that all our faculties, excepting consciousness, may be fallacious, and attempts to prove by argument that they are not, it follows, that, according to his principles, even mathematical axioms require proof. Neither did he allow that there are any *necessary* truths, but maintained, that the truths which are commonly so called, depend upon the will of God.] And we find his followers, who may be supposed to understand his principles, agree in maintaining, that the knowledge of our own existence is the first and fundamental principle from which all knowledge must be deduced by one who proceeds regularly in philosophy.

There is, no doubt, a beauty in raising a large fabric of knowledge upon a few first principles. The stately fabric of mathematical knowledge, raised upon the foundation of a few axioms and definitions, charms every beholder. Des Cartes, who was well acquainted with this beauty in the mathematical sciences, seems to have been ambitious to give the same beautiful simplicity to his system of philosophy; and therefore sought only one first principle as the foundation of all our knowledge, at least of contingent truths.

VIII. *Spirit of modern philosophy in contradistinction to the ancient.*—And so far has his authority prevailed, that those who came after him have almost universally followed him in this track. [This, therefore, may be considered as *the spirit of modern philosophy*, to allow of no first principles of contingent truths but this one, that the thoughts and operations of our own minds, of which we are conscious, are self-evidently real and true; but that every thing else that is contingent is to be proved by argument.]

The existence of a material world, and of what we perceive by our senses, is not self-evident, according to this philosophy. Des Cartes founded it upon this argument, that God, who hath given us our senses, and all our faculties, is no deceiver, and therefore they are not fallacious.

[I endeavoured to show, that if it be not admitted as a first principle, that our faculties are not fallacious, nothing else can be admitted; and that it is impossible to prove this by argument, *unless God should give us new faculties to sit in judgment upon the old.*]

Father Malebranche agreed with Des Cartes, that the existence of a material world requires proof; but being dissatisfied with

Des Cartes' argument from the perfection of the Deity, thought that the only solid proof is from divine revelation.

Arnauld, who was engaged in controversy with Malebranche, approves of his antagonist in offering an argument to prove the existence of the material world, but objects to the solidity of his argument, and offers other arguments of his own.

Mr. Norris, a great admirer of Des Cartes and of Malebranche, seems to have thought all the arguments offered by them and by Arnauld to be weak, and confesses, that we have at best only probable evidence of the existence of the material world.

Mr. Locke acknowledges, that the evidence we have of this point is neither intuitive nor demonstrative; yet he thinks it may be called knowledge, and distinguishes it by the name of sensitive knowledge; and, as the ground of this sensitive knowledge, he offers some weak arguments, which would rather tempt one to doubt than to believe.

At last Bishop Berkeley and Arthur Collier, without any knowledge of each other, as far as appears by their writings, undertook to prove, that there neither is nor can be a material world. The excellent style and elegant composition of the former have made his writings to be known and read, and this system to be attributed to him only, as if Collier had never existed.

IX. *Malebranche and Berkeley disagree.*—[Both, indeed, owe so much to Malebranche, that if we take out of his system the peculiarities (1) of our seeing all things in God, and (2) our learning the existence of an external world from divine revelation, what remains is just the system of Bishop Berkeley.] I make this observation by the way, in justice to a foreign author, to whom British authors seem not to have allowed all that is due.

Mr. Hume hath adopted Bishop Berkeley's arguments against the existence of matter, and thinks them unanswerable.

X. *Hume grants the antecedent of the celebrated enthymeme "cogito," &c.*—We may observe, that this great metaphysician, though in general he declares in favour of universal scepticism, and therefore may seem to have no first principles at all, yet, with Des Cartes, he always acknowledges the reality of those thoughts and operations of mind of which we are conscious. [So that he yields the antecedent of Des Cartes' enthymeme "cogito," but denies the conclusion "ergo sum," the mind being, according to him, nothing but that *train of impressions and ideas of which we are conscious.*]

Thus we see, that the modern philosophy, of which Des Cartes may justly be accounted the founder, being built upon the ruins of the Peripatetic, has a spirit quite opposite, and runs into a contrary extreme. [The Peripatetic not only adopted, as first principles, those which mankind have always rested upon in their most important transactions, but, along with them, many vulgar

prejudices; so that this system was founded upon a wide bottom, but in many parts unsound. The modern system has narrowed the foundation so much, that every superstructure raised upon it appears top-heavy.]

From the single principle of the existence of our own thoughts, very little, if any thing, can be deduced by just reasoning, especially if we suppose that all our other faculties may be fallacious.

Accordingly, we find that Mr. Hume was not the first that was led into scepticism by the want of first principles. For soon after Des Cartes, there arose a sect in France called *Egoists*, who maintained, that we have no evidence of the existence of any thing but ourselves.

Whether these Egoists, like Mr. Hume, believed themselves to be nothing but a train of ideas and impressions, or to have a more permanent existence, I have not learned, having never seen any of their writings; nor do I know whether any of this sect did write in support of their principles. One would think, they who did not believe that there was any person to read, could have little inducement to write, unless they were prompted by that inward monitor, which Persius makes to be the source of genius and the teacher of arts. There can be no doubt, however, of the existence of such a sect, as they are mentioned by many authors, and refuted by some, particularly by Buffier, in his "Treatise of First Principles."

Those Egoists and Mr. Hume seem to me to have reasoned more consequentially from Des Cartes' principle than he did himself; and indeed I cannot help thinking, that all who have followed Des Cartes' method, of requiring proof by argument of every thing except the existence of their own thoughts, have escaped the abyss of scepticism by the help of weak reasoning and strong faith more than by any other means. And they seem to me to act more consistently, who, having rejected the first principles on which belief must be grounded, have no belief, than they, who, like the others, rejecting first principles, must yet have a system of belief, without any solid foundation on which it may stand.

XI. *The philosophers* I have hitherto mentioned, after the time of Des Cartes, have *all followed his method, in resting upon the truth of their own thoughts as a first principle*, but requiring arguments for the proof of every other truth of a contingent nature; but none of them, excepting Mr. Locke, has expressly treated of first principles, or given any opinion of their utility or inutility. We only collect their opinion from their following Des Cartes in requiring proof, or pretending to offer proof of the existence of a material world, which surely ought to be received as a first principle, if any thing be, beyond what we are conscious of.

I proceed, therefore, to consider what Mr. Locke has said on the subject of first principles or maxims.

I have not the least doubt of this author's candour in what he somewhere says, that his Essay was mostly spun out of his own thoughts. Yet it is certain, that, in many of the notions which we are wont to ascribe to him, others were before him, particularly, Des Cartes, Gassendi, and Hobbes. Nor is it at all to be thought strange, that ingenious men, when they are got into the same track, should hit upon the same things.

But, in the definition which he gives of knowledge in general, and in his notions concerning axioms or first principles, I know none that went before him, though he has been very generally followed in both.

His definition of knowledge, that it consists solely in the perception of the agreement or disagreement of our ideas, has been already considered. But supposing it to be just, still it would be true, that some agreements and disagreements of ideas must be immediately perceived; and such agreements or disagreements, when they are expressed by affirmative or negative propositions, are first principles, because their truth is immediately discerned as soon as they are understood.

This I think is granted by Mr. Locke, Book IV. chap. ii. "There is a part of our knowledge," says he, "which we may call intuitive. In this the mind is at no pains of proving or examining, but perceives the truth as the eye does light, only by being directed toward it. And this kind of knowledge is the clearest and most certain that human frailty is capable of. This part of knowledge is irresistible, and like bright sunshine, forces itself immediately to be perceived, as soon as ever the mind turns its view that way."

He further observes, "That this intuitive knowledge is necessary to connect all the steps of a demonstration."

From this, I think, it necessarily follows, that, in every branch of knowledge, we must make use of truths that are intuitively known, in order to deduce from them such as require proof.

But I cannot reconcile this with what he says, sect. viii. of the same chapter. "The necessity of this intuitive knowledge in every step of scientifical or demonstrative reasoning gave occasion, I imagine, to that mistaken axiom, that all reasoning was 'ex præcognitis et præconcessis,' which, how far it is mistaken, I shall have occasion to show more at large, when I come to consider propositions, and particularly those propositions which are called maxims, and to show, that it is by a mistake that they are supposed to be the foundation of all our knowledge and reasonings."

XII. *Locke's first principles admissible.* — I have carefully considered the chapter on maxims, which Mr. Locke here refers

to; and though one would expect, from the quotation last made, that it should run contrary to what I have before delivered concerning first principles, I find only two or three sentences in it, and those chiefly incidental, to which I do not assent; and I am always happy in agreeing with a philosopher whom I so highly respect.

He endeavours to show, that axioms or intuitive truths *are not innate*.

To this I agree. I maintain only, (1) that when the understanding is ripe, and when we distinctly apprehend such truths, we immediately assent to them.

He observes, (2) that *self-evidence is not peculiar to those propositions* which pass under the name of axioms, and have the dignity of axioms ascribed to them.

I grant that there are innumerable self-evident propositions, which have neither dignity nor utility, and therefore deserve not the name of axioms, as that name is commonly understood to imply not only self-evidence, but some degree of dignity or utility. That a man is a man, and that a man is not a horse, are self-evident propositions; but they are, as Mr. Locke very justly calls them, *trifling propositions*. Tillotson very wittily says of such propositions, that they are so *surfeited with truth*, that they are good for nothing; and as they deserve not the name of axioms, so neither do they deserve the name of knowledge.

He observes, (3) that such trifling self-evident propositions as we have named *are not derived from axioms*, and therefore that all our knowledge is not derived from axioms.

I grant that they are not derived from axioms, because they are themselves self-evident. ☞ But it is an abuse of words to call them knowledge, as it is, to call them axioms; for no man can be said to be the wiser or more knowing for having millions of them in store.

He observes, (4) that the particular propositions contained under a general axiom are no less self-evident than the general axiom, and that they are sooner known and understood. Thus, it is as evident that my hand is less than my body, as that a part is less than the whole; and I know the truth of the particular proposition, sooner than that of the general.

This is true. A man cannot perceive the truth of a general axiom, such as, that a part is less than the whole, until he has the general notions of a part and a whole formed in his mind; and, before he has these general notions, he may perceive that his hand is less than his body.

A great part of this chapter on maxims is levelled against a notion, which, it seems, some have entertained, that all our knowledge is derived from these two maxims, to wit, whatever

is, is; and, it is impossible for the same thing to be, and not to be.

This I take to be a ridiculous notion, justly deserving the treatment which Mr. Locke has given it, if it at all merited his notice. These are identical propositions; they are trifling and surfeited with truth: no knowledge can be derived from them.

XIII. *With certain limitations.*—Having mentioned how far I agree with Mr. Locke concerning maxims or first principles, I shall next take notice of two or three things, wherein I cannot agree with him.

In the seventh section of this chapter, he says, That concerning the real existence of all other beings, besides ourselves, and a First Cause, there are no maxims.

[I have endeavoured to show, that there are maxims or first principles with regard to other existences. Mr. Locke acknowledges that we have a knowledge of such existences, which, he says, is neither intuitive nor demonstrative, and which therefore he calls sensitive knowledge. It is demonstrable, and was long ago demonstrated by Aristotle, that every proposition to which we give a rational assent, must either have its evidence in itself, or derive it from some antecedent proposition. And the same thing may be said of the antecedent proposition. As, therefore, we cannot go back to antecedent propositions without end, the evidence must at last rest upon propositions, one or more, which have their evidence in themselves, that is, upon first principles.]

As to the evidence of our own existence, and of the existence of a first cause, Mr. Locke does not say whether it rests upon first principles or not. But it is manifest from what he has said upon both, that it does.

With regard to our own existence, says he, we perceive it so plainly, and so certainly, that it neither needs nor is capable of any proof. This is as much as to say, that our own existence is a first principle; for it is applying to this truth the very definition of a first principle.

He adds, that if I doubt, that very doubt makes me perceive my own existence, and will not suffer me to doubt of that. If I feel pain, I have as certain perception of my existence as of the pain I feel.

XIV. *Locke refuted by an argumentum ad hominem.*—[Here we have two first principles plainly implied: *First,* That my feeling pain, or being conscious of pain, is a certain evidence of the real existence of that pain. And, *secondly,* That pain cannot exist without a mind, or being that is pained. That these are first principles, and incapable of proof, Mr. Locke acknowledges.] And it is certain, that if they are not true, we can

have no evidence of our own existence. For if we may feel pain when no pain really exists, or if pain may exist without any being that is pained, then it is certain that our feeling pain can give us no evidence of our existence.

Thus it appears, that the evidence of our own existence, according to the view that Mr. Locke gives of it, is grounded upon two of those first principles which we had occasion to mention.

If we consider the argument he has given for the existence of a first intelligent cause, it is no less evident that it is grounded upon other two of them. [The first, That what begins to exist must have a cause of its existence; and the second, that an unintelligent and unthinking being cannot be the cause of beings that are thinking and intelligent.] Upon these two principles, he argues very convincingly for the existence of a first intelligent cause of things. And, if these principles are not true, we can have no proof of the existence of a first cause, either from our own existence, or from the existence of other things that fall within our view.

☞ Another thing advanced by Mr. Locke upon this subject, is, that no science is, or hath been, built upon maxims.

Surely Mr. Locke was not ignorant of geometry, which hath been built upon maxims prefixed to the elements, as far back as we are able to trace it. But though they had not been prefixed, which was a matter of utility rather than necessity, yet it must be granted, that every demonstration in geometry is grounded, either upon propositions formerly demonstrated, or upon self-evident principles.

Mr. Locke further says, that maxims are not of use to help men forward in the advancement of the sciences, or new discoveries of yet unknown truths. That Newton, in the discoveries he has made in his never-enough-to-be-admired book, has not been assisted by the general maxims, whatever is, is; or the whole is greater than a part, or the like.

I answer, the first of these is, as was before observed, an identical trifling proposition, of no use in mathematics, or in any other science. The second is often used by Newton, and by all mathematicians, and many demonstrations rest upon it. In general, Newton, as well as all other mathematicians, grounds his demonstrations of mathematical propositions upon the axioms laid down by Euclid, or upon propositions which have been before demonstrated by help of those axioms.

But it deserves to be particularly observed, that Newton, intending in the third book of his "Principia," to give a more scientific form to the physical part of astronomy, which he had at first composed in a popular form, thought proper to follow the

example of Euclid, and to lay down first, in what he calls, "Regulæ Philosophandi," and in his "Phenomena," the first principles which he assumes in his reasoning.

XV. *The example of Newton does not sustain this principle of Locke.*—[Nothing, therefore, could have been more unluckily adduced by Mr. Locke to support his aversion to first principles, than the example of Sir Isaac Newton, who, by laying down the first principles upon which he reasons in those parts of natural philosophy which he cultivated, has given a stability to that science which it never had before, and which it will retain to the end of the world.]

I am now to give some account of a philosopher, who wrote expressly on the subject of first principles, after Mr. Locke.

Père Buffier, a French jesuit, first published his "Traité des premiers Verités, et de la source de nos jugements," in 8vo, if I mistake not, in the year 1724. It was afterwards published in folio, as a part of his "Cours des sciences." Paris, 1732.

XVI. *Buffier's definition of first principles.*—He defines first principles to be *propositions so clear, that they can neither be proved, nor combated by those that are more clear.*

The first source of first principles he mentions, is that intimate conviction which every man has of his own existence, and of what passes in his own mind. Some philosophers, he observes, admitted these as first principles, who were unwilling to admit any others; and he shows the strange consequences that follow from this system.

A second source of first principles he makes to be common sense; which, he observes, philosophers have not been wont to consider. He defines it to be, the disposition which nature has planted in all men, or the far greater part, which leads them, when they come to the use of reason, to form a common and uniform judgment upon objects which are not objects of consciousness, nor are founded on any antecedent judgment.

He mentions not as a full enumeration, but as a specimen, the following principles of common sense:

1. That there are other beings, and other men in the universe, besides myself.

2. That there is in them something that is called truth, wisdom, prudence, and that these things are not purely arbitrary.

3. That there is something in me which I call intelligence, and something which is not that intelligence, which I call my body, and that these things have different properties.

4. That all men are not in a conspiracy to deceive me and impose upon my credulity.

5. That what has not intelligence cannot produce the effects of intelligence, nor can pieces of matter thrown together by chance form any regular work, such as a clock or watch.

He explains very particularly the several parts of his definition of common sense, and shows how the dictates of common sense may be distinguished from common prejudices; and then enters into a particular consideration of the primary truths that concern being in general; the truths that concern thinking beings; those that concern body; and those on which the various branches of human knowledge are grounded.

I shall not enter into a detail of his sentiments on these subjects. I think there is more which I take to be original in this treatise, than in most books of the metaphysical kind I have met with; that many of his notions are solid; and that others, which I cannot altogether approve, are ingenious.

XVII. *The Cartesian method of philosophizing.*—[The other writers I have mentioned, after Des Cartes, may, I think, without impropriety, be called Cartesians. For though they differ from Des Cartes in some things, and contradict him in others, yet they set out from the same principles, and follow the same method, *admitting no other first principle with regard to the existence of things but their own existence, and the existence of those operations of mind of which they are conscious*, and requiring that the existence of a material world, and the existence of other men and things, should be proved by argument.]

This method of philosophizing is common to Des Cartes, Malebranche, Arnauld, Locke, Norris, Collier, Berkeley, and Hume; and, as it was introduced by Des Cartes, I call it the Cartesian system, and those who follow it Cartesians, not intending any disrespect by this term, but to signify a particular method of philosophising common to them all, and begun by Des Cartes.

Some of these have gone the utmost length in scepticism, leaving no existence in nature but that of ideas and impressions. Some have endeavoured to throw off the belief of a material world only, and to leave us ideas and spirits. All of them have fallen into very gross paradoxes, which can never sit easy upon the human understanding, and which, though adopted in the closet, men find themselves under a necessity of throwing off and disclaiming when they enter into society.

Indeed, in my judgment, those who have reasoned most acutely and consequentially upon this system, are they that have gone deepest into scepticism.

Father Buffier, however, is no Cartesian in this sense. He seems to have perceived the defects of the Cartesian system while it was in the meridian of its glory, and to have been aware that a ridiculous scepticism is the natural issue of it, and therefore nobly attempted to lay a broader foundation for human knowledge, and has the honour of being the first, as far as I know, after Aristotle, who has given the world a just treatise upon first principles.

Some late writers, particularly Dr. Oswald, Dr. Beattie, and Dr. Campbell, have been led into a way of thinking somewhat similar to that of Buffier; the two former, as I have reason to believe, without any intercourse with one another, or any knowledge of what Buffier had wrote on the subject. Indeed, a man who thinks, and who is acquainted with the philosophy of Mr. Hume, will very naturally be led to apprehend, that, to support the fabric of human knowledge, some other principles are necessary than those of Des Cartes and Mr. Locke. Buffier must be acknowledged to have the merit of having discovered this, before the consequences of the Cartesian system were so fully displayed as they have been by Mr. Hume. But I am apt to think, that the man who does not see this now, must have but a superficial knowledge of these subjects.

The three writers above mentioned have my high esteem and affection as men; but I intend to say nothing of them as writers upon this subject, that I may not incur the censure of partiality. Two of them have been joined so closely with me in the animadversions of a celebrated writer, that we may be thought too near of kin to give our testimony of one another.

QUESTIONS FOR EXAMINATION.

Of what description were the first principles of the Peripatetic philosophy?
What two principles has Des Cartes taken for granted in his famous "Enthymeme?"
According to this philosopher, neither the truth of mathematical axioms nor axioms themselves were *necessary*?
The spirit of modern philosophy in contradistinction to that of the ancients?
Malebranche differs from Berkeley?
In what respect does Hume admit the Cartesian "Enthymeme?"
How far do Reid and Locke agree with respect to first principles?
How far also do they differ?
Reid here uses an *argumentum ad hominem* against Locke?
Locke not at liberty to adduce the example of Newton in favour of his views
The Cartesian method described?

CHAPTER VIII.

OF PREJUDICES, THE CAUSES OF ERROR.

I. *Analogy between mind and body.*—Our intellectual powers are wisely fitted by the Author of our nature for the discovery of truth, as far as suits our present state. Error is not their natural issue, any more than disease is, of the natural structure of the body. Yet, as we are liable to various diseases of body from accidental causes, external and internal; so we are, from like causes, liable to wrong judgments.

Medical writers have endeavoured to enumerate the diseases of the body, and to reduce them to a system, under the name of *nosology;* and it were to be wished that we had also a nosology of the human understanding.

When we know a disorder of the body, we are often at a loss to find the proper remedy; but in most cases the disorders of the understanding point out their remedies so plainly, that he who knows the one must know the other.

Many authors have furnished useful materials for this purpose, and some have endeavoured to reduce them to a system. I like best the general division given of them by Lord Bacon in his fifth book "De Augmentis Scientiarum," and more fully treated in his "Novum Organum." He divides them into four classes, *idola tribus, idola specus, idola fori,* and *idola theatri.* The names are perhaps fanciful: but I think the division judicious, like most of the productions of that wonderful genius. And as this division was first made by him, he may be indulged with the privilege of giving names to its several members.

I propose in this chapter to explain the several members of this division, according to the meaning of the author, and to give instances of each, without confining myself to those which Lord Bacon has given, and without pretending to a complete enumeration.

II. *Of Bacon's "Idols."*—To every bias of the understanding, by which a man may be misled in judging, or drawn into error, Lord Bacon gives the name of an idol. The understanding, in its natural and best state, pays its homage to truth only. The causes of error are considered by him as so many false deities, who receive the homage which is due only to truth.

[The first class are the *idola tribus.** These are such as beset the whole human species; so that every man is in danger from them. They arise from principles of the human constitution, which are highly useful and necessary in our present state; but, by their excess or defect, or wrong direction, may lead us into error.]

As the active principles of the human frame are wisely contrived by the Author of our being, for the direction of our actions, and yet, without proper regulation and restraint, are apt to lead us wrong; so it is also with regard to those parts of our constitution that have influence upon our opinions. Of this we may take the following instances:

[1. *First,* Men are prone to be led too much by *authority* in their opinions.

In the first part of life we have no other guide; and without a

* Idola tribus arise (1) from the influence of *authority;* (2) from a predisposition of mind; (3) love of simplicity; (4) incompetence of our faculties; (5) inquietude; (6) our affections and passions; (7) the manner of the impression.

disposition to receive implicitly what we are taught, we should be incapable of instruction, and incapable of improvement.]

When judgment is ripe, there are many things in which we are incompetent judges. In such matters, it is most reasonable to rely upon the judgment of those whom we believe to be competent and disinterested. The highest court of judicature in the nation relies upon the authority of lawyers and physicians in matters belonging to their respective professions. ☞

[Even in matters which we have access to know, authority always will have, and ought to have, more or less weight, in proportion to the evidence on which our own judgment rests, and the opinion we have of the judgment and candour of those who differ from us, or agree with us.] ☞ The modest man, conscious of his own fallibility in judging, is in danger of giving too much to authority; the arrogant of giving too little.

In all matters belonging to our cognisance, every man must be determined by his own final judgment, otherwise he does not act the part of a rational being. Authority may add weight to one scale; but the man holds the balance, and judges what weight he ought to allow to authority.

If a man should even claim infallibility, we must judge of his title to that prerogative. If a man pretend to be an ambassador from heaven, we must judge of his credentials. No claim can deprive us of this right, or excuse us for neglecting to exercise it.

As therefore our regard to authority may be either too great or too small, the bias of human nature seems to lean to the first of these extremes; and I believe it is good for men in general that it should do so.

[When this bias concurs with an indifference about truth, its operation will be the more powerful.]

The love of truth is natural to man, and strong in every well-disposed mind. But it may be overborne by party-zeal, by vanity, by the desire of victory, or even by laziness. When it is superior to these, it is a manly virtue, and requires the exercise of industry, fortitude, self-denial, candour, and openness to conviction.

As there are persons in the world of so mean and abject a spirit, that they rather choose to owe their subsistence to the charity of others, than by industry to acquire some property of their own; so there are many more who may be called mere beggars with regard to their opinions. Through laziness and indifference about truth, they leave to others the drudgery of digging for this commodity; they can have enough at second hand to serve their occasions. Their concern is not to know what is true, but what is said and thought on such subjects; and their understanding, like their clothes, is cut according to the fashion.

This distemper of the understanding has taken so deep root in a great part of mankind, that it can hardly be said that they use their own judgment in things that do not concern their temporal interest; nor is it peculiar to the ignorant; it infects all ranks. We may guess their opinions when we know where they were born, of what parents, how educated, and what company they have kept. These circumstances determine their opinions in religion, in politics, and in philosophy.

[2. A *second* general prejudice arises from a disposition to measure things less known, and less familiar, by those that are better known and more familiar.]

This is the foundation of analogical reasoning, to which we have a great proneness by nature, and to it indeed we owe a great part of our knowledge. It would be absurd to lay aside this kind of reasoning altogether, and it is difficult to judge how far we may venture upon it. The bias of human nature is to judge from too slight analogies.

III. *Example of false analogy arising from the incompetence of our faculties.*—The objects of sense engross our thoughts in the first part of life, and are most familiar through the whole of it. ☞ Hence in all ages men have been prone to attribute the human figure and human passions and frailties to superior intelligences, and even to the Supreme Being.

There is a disposition in men to materialize every thing, if I may be allowed the expression; that is, to apply the notions we have of material objects to things of another nature. Thought is considered as analogous to motion in a body; and as bodies are put in motion by impulses, and by impressions made upon them by contiguous objects, we are apt to conclude that the mind is made to think by impressions made upon it, and that there must be some kind of contiguity between it and the objects of thought. ☞ *Hence the theories of ideas and impressions have so generally prevailed.*

☞ Because the most perfect works of human artists are made after a model, and of materials that before existed, the ancient philosophers universally believed that the world was made of a pre-existent uncreated matter; and many of them, that there were eternal and uncreated models of every species of things which God made.

The mistakes in common life, which are owing to this prejudice, are innumerable, and cannot escape the slightest observation. Men judge of other men by themselves, or by the small circle of their acquaintance. The selfish man thinks all pretences to benevolence and public spirit to be mere hypocrisy or self-deceit. The generous and open-hearted believe fair pretences too easily, and are apt to think men better than they really are. The abandoned and profligate can hardly be persuaded that

there is any such thing as real virtue in the world. The rustic forms his notions of the manners and characters of men from those of his country village, and is easily duped when he comes into a great city.

It is commonly taken for granted, that this narrow way of judging of men is to be cured only by an extensive intercourse with men of different ranks, professions, and nations; and that the man whose acquaintance has been confined within a narrow circle, must have many prejudices and narrow notions, which a more extensive intercourse would have cured.

[3. Men are often led into error by the love of simplicity, which disposes us to reduce things to few principles, and to conceive a greater simplicity in nature than there really is.]

To love simplicity, and to be pleased with it wherever we find it, is no imperfection, but the contrary. It is the result of good taste. We cannot but be pleased to observe, that all the changes of motion produced by the collision of bodies, hard, soft, or elastic, are reducible to three simple laws of motion, which the industry of philosophers has discovered.

When we consider what a prodigious variety of effects depend upon the law of gravitation; how many phenomena in the earth, sea, and air, which, in all preceding ages, had tortured the wits of philosophers, and occasioned a thousand vain theories, are shown to be the necessary consequences of this one law; how the whole system of sun, moon, planets, primary and secondary, and comets, are kept in order by it, and their seeming irregularities accounted for and reduced to accurate measure; the simplicity of the cause, and the beauty and variety of the effects, must give pleasure to every contemplative mind. By this noble discovery, we are taken, as it were, behind the scene in this great drama of nature, and made to behold some part of the art of the divine Author of this system, which, before this discovery, eye had not seen, nor ear heard, nor had it entered into the heart of man to conceive.

There is, without doubt, in every work of nature, all the beautiful simplicity that is consistent with the end for which it was made. But if we hope to discover how nature brings about its ends, merely from this principle, that it operates in the simplest and best way, we deceive ourselves, and forget that the wisdom of nature is more above the wisdom of man, than man's wisdom is above that of a child.

☞ If a child should sit down to contrive how a city is to be fortified, or an army arranged in the day of battle, he would, no doubt, conjecture what, to his understanding, appeared the simplest and best way. But could he ever hit upon the true way? No surely. When he learns from fact how these effects are produced, he will then see how foolish his childish conjectures were.

We may learn something of the way in which nature operates, from fact and observation; but if we conclude that it operates in such a manner, only because to our understanding, that appears to be the best and simplest manner, we shall always go wrong.

It was believed, for many ages, that all the variety of concrete bodies we find on this globe is reducible to four elements, of which they are compounded, and into which they may be resolved. It was the simplicity of this theory, and not any evidence from fact, that made it to be so generally received; for the more it is examined, we find the less ground to believe it.

The Pythagoreans and Platonists were carried farther by the same love of simplicity. Pythagoras, by his skill in mathematics, discovered, that there can be no more than five regular solid figures, terminated by plain surfaces which are all similar and equal; to wit, the tetrahedron, the cube, the octahedron, the dodecahedron, and the eicosihedron. [As nature works in the most simple and regular way, he thought that all the elementary bodies must have one or other of those regular figures; and that the discovery of the properties and relations of the regular solids would be a key to open the mysteries of nature.]

IV. *Occasion of Euclid's treatise.*—This notion of the Pythagoreans and Platonists has undoubtedly great beauty and simplicity. Accordingly it prevailed, at least, to the time of Euclid. He was a Platonic philosopher, and is said to have wrote all the books of his Elements, in order to discover the properties and relations of the five regular solids. This ancient tradition of the intention of Euclid in writing his "Elements," is countenanced by the work itself. For the last books of the "Elements," treat of the regular solids, and all the preceding are subservient to the last.

So that this most ancient mathematical work, which, for its admirable composition, has served as a model to all succeeding writers in mathematics, seems, like the two first books of Newton's "Principia," to have been intended by its author to exhibit the mathematical principles of natural philosophy.

V. *Examples of errors arising from love of simplicity.*—It was long believed, that all the qualities of bodies, and all their medical virtues, were reducible to four; moisture and dryness, heat and cold: and that there are only four temperaments of the human body; the sanguine, the melancholy, the bilious, and the phlegmatic. The chemical system, of reducing all bodies to salt, sulphur, and mercury, was of the same kind. [For how many ages did men believe, that the division of *all the objects of thought into ten categories*, and of *all that can be affirmed or denied of any thing*, into *five* universals or *predicables*, were perfect enumerations?]

The evidence from reason that could be produced for those

systems was next to nothing, and bore no proportion to the ground they gained in the belief of men; but they were simple and regular, and reduced things to a few principles; and this supplied their want of evidence.

Of all the systems we know, that of Des Cartes was most remarkable for its simplicity. Upon one proposition, *I think*, he builds the whole fabric of human knowledge. And from mere matter, with a certain quantity of motion given it at first, he accounts for all the phenomena of the material world.

The physical part of this system was mere hypothesis. It had nothing to recommend it but its simplicity; yet it had force enough to overturn the system of Aristotle, after that system had prevailed for more than a thousand years.

The principle of gravitation, and other attracting and repelling forces, after Sir Isaac Newton had given the strongest evidence of their real existence in nature, were rejected by the greatest part of Europe for half a century, because they could not be accounted for by matter and motion. So much were men enamoured with the simplicity of the Cartesian system.

☞ Nay, I apprehend, it was this love of simplicity, more than real evidence, that led Newton himself to say, in the preface to his "Principia," speaking of the phenomena of the material world, "Nam multa me movent ut nonnihil suspicer, ea omnia ex viribus quibusdam pendere posse, quibus corporum particulæ, per causas nondum cognitas, vel in se mutuo impelluntur, et secundum figuras regulares cohærent, vel ab se invicem fugantur et recedunt."—"For many reasons incline me to suspect, that they may all depend on certain forces by which the particles of bodies, in a manner not yet known, are either mutually impelled to each other, and cohere in regular figures, or, are repelled, and recede from each other." For certainly we have no evidence from fact, that all the phenomena of the material world are produced by *attracting or repelling forces*.

With his usual modesty, he proposes it only as a slight suspicion; and the ground of this suspicion could only be, that he saw that many of the phenomena of nature depended upon causes of this kind; and therefore was disposed, from the simplicity of nature, to think that all do.

When a real cause is discovered, the same love of simplicity leads men to attribute effects to it which are beyond its province.

A medicine that is found to be of great use in one distemper, commonly has its virtues multiplied, till it becomes a *panacea*. Those who have lived long, can recollect many instances of this. In other branches of knowledge, the same thing often happens. When the attention of men is turned to any particular cause, by discovering it to have remarkable effects, they are in great danger

of extending its influence, upon slight evidence, to things with which it has no connexion. Such prejudices arise from the natural desire of simplifying natural causes, and of accounting for many phenomena from the same principle.

[4. One of the most copious sources of error in philosophy, is the misapplication of our noblest intellectual power to purposes for which it is *incompetent*.]

Of all the intellectual powers of man, that of invention bears the highest price. It resembles most the power of creation, and is honoured with that name.

We admire the man who shows a superiority in the talent of finding the means of accomplishing an end; who can, by a happy combination, produce an effect, or make a discovery beyond the reach of other men; who can draw important conclusions from circumstances that commonly pass unobserved; who judges with the greatest sagacity of the designs of other men, and the consequences of his own actions. To this superiority of understanding we give the name of genius, and look up with admiration to every thing that bears the marks of it.

Yet this power, so highly valuable in itself, and so useful in the conduct of life, may be misapplied; and men of genius, in all ages, have been prone to apply it to purposes for which it is altogether incompetent.

The works of men and the works of nature are not of the same order. The force of genius may enable a man perfectly to comprehend the former, and to see them to the bottom. What is contrived and executed by one man may be perfectly understood by another man. With great probability, he may from a part conjecture the whole, or from the effects may conjecture the causes; because they are effects of a wisdom not superior to his own.

But the works of nature are contrived and executed by a wisdom and power infinitely superior to that of man; and when men attempt, by the force of genius, to discover the causes of the phenomena of nature, they have only the chance of going wrong more ingeniously. Their conjectures may appear very probable to beings no wiser than themselves; but they have no chance to hit the truth. They are like the conjectures of a child how a ship of war is built, and how it is managed at sea.

Let the man of genius try to make an animal, even the meanest; to make a plant, or even a single leaf of a plant, or feather of a bird; he will find that all his wisdom and sagacity can bear no comparison with the wisdom of nature, nor his power with the power of nature.

The experience of all ages shows how prone ingenious men have been to invent hypotheses to explain the phenomena of nature; how fond, by a kind of anticipation, to discover her

secrets. Instead of a slow and gradual ascent in the scale of natural causes, by a just and copious induction, they would shorten the work, and, by a flight of genius, get to the top at once. This gratifies the pride of human understanding; but it is an attempt beyond our force, like that of Phaeton to guide the chariot of the sun.

When a man has laid out all his ingenuity in fabricating a system, he views it with the eye of a parent; he strains phenomena to make them tally with it, and make it look like the work of nature.

The slow and patient method of induction, the only way to attain any knowledge of nature's work, was little understood until it was delineated by Lord Bacon, and has been little followed since. It humbles the pride of man, and puts him constantly in mind that his most ingenious conjectures with regard to the works of God are pitiful and childish.

There is no room here for the favourite talent of invention. In the humble method of information, from the great volume of nature we must receive all our knowledge of nature. Whatever is beyond a just interpretation of that volume is the work of man; and the work of God ought not to be contaminated by any mixture with it.

To a man of genius, self-denial is a difficult lesson in philosophy as well as in religion. To bring his fine imaginations and most ingenious conjectures to the fiery trial of experiment and induction, by which the greater part, if not the whole, will be found to be dross, is a humiliating task. This is to condemn him to dig in a mine, when he would fly with the wings of an eagle.

In all the fine arts, whose end is to please, genius is deservedly supreme. In the conduct of human affairs it often does wonders; but in all inquiries into the constitution of nature it must act a subordinate part, ill-suited to the superiority it boasts. It may combine, but it must not fabricate. It may collect evidence, but must not supply the want of it by conjecture. It may display its powers by putting nature to the question in well-contrived experiments, but it must add nothing to her answers.

[5. In avoiding one extreme, men are very apt to rush into the opposite.

Thus, in rude ages, men, unaccustomed to search for natural causes, ascribe every uncommon appearance to the immediate interposition of invisible beings; but when philosophy has discovered natural causes of many events, which, in the days of ignorance, were ascribed to the immediate operation of gods or demons, they are apt to think, that all the phenomena of nature may be accounted for in the same way, and that there is no need of an invisible Maker and Governor of the world.]

Rude men are at first disposed to ascribe intelligence and active power to every thing they see move or undergo any change. "Savages," says the Abbé Raynal, "wherever they see motion which they cannot account for, there they suppose a soul." When they come to be convinced of the folly of this extreme, they are apt to run into the opposite, and to think that every thing moves only as it is moved, and acts as it is acted upon.

☞ [Thus, from the extreme of *superstition*, the transition is easy to that of *atheism;* and from the extreme of ascribing activity to every part of nature, to that of excluding it altogether, and making even the determinations of intelligent beings, the links of one fatal chain, or the wheels of one great machine.]

The abuse of occult qualities in the Peripatetic philosophy led Des Cartes and his followers to reject all occult qualities; to pretend to explain all the phenomena of nature by mere matter and motion, and even to fix disgrace upon the name of occult quality.

[6. Men's judgments are often perverted by their *affections and passions.* This is so commonly observed, and so universally acknowledged, that it needs no proof nor illustration.]

VI. [The second class of idols in Lord Bacon's division are the *idola specus.**]

These are prejudices which have their origin, not from the constitution of human nature, but from something peculiar to the individual.

As in a cave objects vary in their appearance according to the form of the cave and the manner in which it receives the light, Lord Bacon conceives the mind of every man to resemble a cave, which has its particular form, and its particular manner of being enlightened; and, from these circumstances, often gives false colours and a delusive appearance to objects seen in it.

For this reason, he gives the name of *idola specus* to those prejudices which arise from the particular way in which a man has been trained, from his being addicted to some particular profession, or from something particular in the turn of his mind.

A man whose thoughts have been confined to a certain track by his profession or manner of life, is very apt to judge wrong when he ventures out of that track. He is apt to draw every thing within the sphere of his profession, and to judge by its maxims of things that have no relation to it.

The mere mathematician is apt to apply measure and calculation to things which do not admit of it. Direct and inverse ratios have been applied by an ingenious author to measure human affections, and the moral worth of actions. An eminent mathematician attempted to ascertain by calculation, the ratio in

* These errors arise from (1) an undue admiration of antiquity, (2) predilection for sectarian or individual tenets.

which the evidence of facts must decrease in the course of time, and fixed the period when the evidence of the facts on which Christianity is founded shall become evanescent, and when in consequence no faith shall be found on the earth. I have seen a philosophical dissertation published by a very good mathematician, wherein, in opposition to the ancient division of things into ten categories, he maintains that there are no more, and can be no more than two categories, to wit, data and quæsita.

The ancient chemists were wont to explain all the mysteries of nature, and even of religion, by salt, sulphur, and mercury.

Mr. Locke, I think, mentions an eminent musician, who believed that God created the world in six days, and rested the seventh, because there are but seven notes in music. I knew one of that profession, who thought that there could be only three parts in harmony, to wit, bass, tenor and treble; because there are but three persons in the Trinity.

The learned and ingenious Dr. Henry More, having very elaborately and methodically compiled his "Enchiridium Metaphysicum," and "Enchiridium Ethicum," found all the divisions and subdivisions of both to be allegorically taught in the first chapter of Genesis. Thus even very ingenious men are apt to make a ridiculous figure, by drawing into the track in which their thoughts have long run, things altogether foreign to it.

Different persons, either from temper or from education, have different tendencies of understanding, which, by their excess, are unfavourable to sound judgment.

☞ Some have *an undue admiration of antiquity*, and contempt of whatever is modern; others go as far into the contrary extreme. It may be judged, that the former are persons who value themselves upon their acquaintance with ancient authors, and the latter such as have little knowledge of this kind.

Some are afraid to venture a step out of the beaten track, and think it safest to go with the multitude; others are fond of singularities, and of every thing that has the air of paradox.

Some are desultory and changeable in their opinions; others unduly tenacious. Most men have *a predilection* for the tenets of their sect or party, and still more for their own inventions.

VII. [The *idola fori* are the fallacies arising from the imperfections and the abuse of language, which is an instrument of thought as well as of the communication of our thoughts.]

Whether it be the effect of constitution or of habit, I will not take upon me to determine; but, from one or both of these causes, it happens, that no man can pursue a train of thought or reasoning without the use of language. Words are the signs of our thoughts; and the sign is so associated with the thing signified, that the last can hardly present itself to the imagination, without drawing the other along with it.

A man who would compose in any language, must think in that language. If he thinks in one language what he would express in another, he thereby doubles his labour, and after all, his expressions will have more the air of a translation than of an original.

This shows, that our thoughts take their colour in some degree from the language we use; and that, although language ought always to be subservient to thought, yet thought must be at some times, and in some degree, subservient to language.

As a servant that is extremely useful and necessary to his master, by degrees acquires an authority over him, so that the master must often yield to the servant; such is the case with regard to language. Its intention is to be a servant to the understanding; but it is so useful and so necessary, that we cannot avoid being sometimes led by it when it ought to follow. We cannot shake off this impediment, we must drag it along with us; and therefore must direct our course, and regulate our pace, as it permits.

VIII. [*Language must have many imperfections when applied to philosophy,* because it was not made for that use. In the early periods of society, rude and ignorant men use certain forms of speech, to express their wants, their desires, and their transactions with one another. Their language can reach no farther than their speculations and notions; and if their notions be vague and ill-defined, the words by which they express them must be so likewise.]

It was a grand and noble project of Bishop Wilkins, to invent a philosophical language, which should be free from the imperfections of vulgar languages. Whether this attempt will ever succeed, so far as to be generally useful, I shall not pretend to determine. The great pains taken by that excellent man in this design have hitherto produced no effect. Very few have ever entered minutely into his views; far less have his "philosophical language" and his "real character" been brought into use.

He founds his philosophical language and real character upon a systematical division and sub-division of all the things which may be expressed by language; and, instead of the ancient division into ten categories, has made forty categories, or summa genera. But whether this division, though made by a very comprehensive mind, will always suit the various systems that may be introduced, and all the real improvements that may be made in human knowledge, may be doubted. The difficulty is still greater in the sub-divisions: so that it is to be feared, that this noble attempt of a great genius will prove abortive, until philosophers have the same opinions and the same systems in the various branches of human knowledge.

There is more reason to hope, that the languages used by phi-

losophers may be gradually improved in copiousness and in distinctness; and that improvements in knowledge and in language may go hand in hand, and facilitate each other. But I fear the imperfections of language can never be perfectly remedied while our knowledge is imperfect.

However this may be, it is evident that the imperfections of language, and much more the abuse of it, are the occasion of many errors; and that in many disputes which have engaged learned men, the difference has been partly, and in some wholly, about the meaning of words.

Mr. Locke found it necessary to employ a fourth part of his "Essay on Human Understanding" about words; their various kinds; their imperfection and abuse, and the remedies of both; and has made many observations upon these subjects, well worthy of attentive perusal.

IX. [The fourth class of prejudices are the *idola theatri*, by which are meant prejudices arising from the systems or sects, in which we have been trained, or which we have adopted.]

A false system once fixed in the mind, becomes, as it were, the medium through which we see objects: they receive a tincture from it, and appear of another colour than when seen by a pure light.

Upon the same subject, a Platonist, a Peripatetic, and an Epicurean, will think differently, not only in matters connected with his peculiar tenets, but even in things remote from them.

X. *Utility of a history of sects in philosophy.*—A judicious history of the different sects of philosophers, and the different methods of philosophizing, which have obtained among mankind, would be of no small use *to direct men in the search of truth.* In such a history, what would be of the greatest moment is not so much a minute detail of the "dogmata" of each sect, as a just delineation of the spirit of the sect, and of that point of view in which things appeared to its founder. This was perfectly understood, and, as far as concerns the theories of morals, is executed with great judgment and candour by Dr. Smith in his "Theory of Moral Sentiments."

As there are certain temperaments of the body that dispose a man more to one class of diseases than to another; and, on the other hand, diseases of that kind, when they happen by accident, are apt to induce the temperament that is suited to them; there is something analogous to this in the diseases of the understanding.

[A certain complexion of understanding may dispose a man to one system of opinions more than to another; and, on the other hand, a system of opinions, fixed in the mind by education or otherwise, gives that complexion to the understanding which is suited to them.]

It were to be wished, that the different systems that have prevailed could be classed according to their spirit, as well as named from their founders. Lord Bacon has distinguished false philosophy into the sophistical, the empirical, and the superstitious, and has made judicious observations upon each of these kinds. But I apprehend this subject deserves to be treated more fully by such a hand, if such a hand can be found.

QUESTIONS FOR EXAMINATION.

What is meant by an "idol?"
Idola tribus?
An example of false analogy arising from the incompetence of our senses?
Why is language necessarily defective when applied to philosophy?

ESSAY VII.

OF REASONING.

CHAPTER I.

OF REASONING IN GENERAL, AND OF DEMONSTRATION.

I. *Judgment different from reasoning.*—[THE power of reasoning is very nearly allied to that of judging; and it is of little consequence in the common affairs of life to distinguish them nicely. On this account, the same name is often given to both. We include both under the name of reason. The assent we give to a proposition is called judgment, whether the proposition be self-evident, or derive its evidence by reasoning from other propositions.]

[Yet there is a distinction between reasoning and judging. Reasoning is *the process by which we pass from one judgment to another which is the consequence of it.* Accordingly our judgments are distinguished into intuitive, which are not grounded upon any preceding judgment, and discursive, which are deduced from some preceding judgment by reasoning.]

In all reasoning, therefore, there must be a proposition inferred, and one or more from which it is inferred. And this power of inferring, or drawing a conclusion, is only another name for reasoning; the proposition inferred being called the *conclusion,* and the proposition or propositions from which it is inferred, the *premises.*

Reasoning may consist of many steps; the first conclusion being a premise to a second, that to a third, and so on, till we come to the last conclusion. ☞ A process consisting of many steps of this kind, is so easily distinguished from judgment, that it is never called by that name. ☞ But when there is only *a single step* to the conclusion, the distinction is less obvious, and the process is sometimes called judgment, sometimes reasoning.

II. *Yet confounded with it even by logicians.*—☞ It is not strange, that, in common discourse, judgment and reasoning should not be very nicely distinguished, since they are in some cases confounded *even by logicians.* We are taught in logic, that udgment is expressed by one proposition, but that reason-

ing requires two or three. [But so various are the modes of speech, that what in one mode is expressed by two or three propositions, may in another mode be expressed by one. Thus I may say, *God is good; therefore good men shall be happy.* This is reasoning, of that kind which logicians call *an enthymeme*, consisting of an antecedent proposition, and a conclusion drawn from it. But this reasoning may be expressed by one proposition, thus: *because God is good, good men shall be happy.* This is what they call a *causal proposition*, and therefore expresses judgment; yet the enthymeme, which is reasoning, expresses no more.]

III. *These faculties agree in some respects.*—[Reasoning, as well as judgment, must be true or false; both are grounded upon evidence which may be probable or demonstrative, and both are accompanied with assent or belief.]

IV. *We do not ascribe the power of reasoning to the Almighty.*—☞ The power of reasoning is justly accounted one of the prerogatives of human nature; because by it many important truths have been, and may be discovered, which without it would be beyond our reach; yet it seems to be only a kind of crutch to a limited understanding. We can conceive an understanding, superior to human, to which that truth appears intuitively, which we can only discover by reasoning. [For this cause, though we must ascribe judgment to the Almighty, we do not ascribe reasoning to him, because it implies some defect or limitation of understanding. ☞ Even among men, to use reasoning in things that are self-evident, is trifling; like a man going upon crutches when he can walk upon his legs.]

What reasoning is, can be understood only by a man who has reasoned, and who is capable of reflecting upon this operation of his own mind. We can define it only by synonymous words or phrases, such as inferring, drawing a conclusion, and the like. The very notion of reasoning, therefore, can enter into the mind by no other channel than that of reflecting upon the operation of reasoning in our own minds; and the notions of premises and conclusion, of a syllogism, and all its constituent parts, of an enthymeme, sorites, demonstration, paralogism, and many others, have the same origin.

It is nature undoubtedly that gives us the capacity of reasoning. When this is wanting, no art nor education can supply it. But this capacity may be dormant through life, like the seed of a plant, which, for want of heat and moisture, never vegetates. This is probably the case of some savages.

Although the capacity be purely the gift of nature, and probably given in very different degrees to different persons; yet the power of reasoning seems to be got by habit, as much as the power of walking or running. Its first exertions we are not

able to recollect in ourselves, or clearly to discern in others. They are very feeble, and need to be led by example and supported by authority. By degrees it acquires strength, chiefly by means of imitation and exercise.

V. *Two advantages result from the exercise of our powers of reasoning.*—[The exercise of reasoning on various subjects not only (1) strengthens the faculty, but (2) furnishes the mind with a store of materials.] Every train of reasoning, which is familiar, becomes a beaten track in the way to many others. It removes many obstacles which lay in our way, and smooths many roads which we may have occasion to travel in future disquisitions.

When men of equal natural parts apply their reasoning power to any subject, the man who has reasoned much on the same, or on similar subjects, has a like advantage over him who has not, as the mechanic who has store of tools for his work, has of him who has his tools to make, or even to invent.

In a train of reasoning, the evidence of every step, where nothing is left to be supplied by the reader or hearer, must be immediately discernible to every man of ripe understanding who has a distinct comprehension of the premises and conclusion, and who compares them together. To be able to comprehend, in one view, a combination of steps of this kind, is more difficult, and seems to require a superior natural ability. In all, it may be much improved by habit.

VI. *Of invention.*—[But the highest talent in reasoning is the invention of proofs; by which, truths remote from the premises are brought to light. In all works of understanding, invention has the highest praise; it requires an extensive view of what relates to the subject, and a quickness in discerning those affinities and relations which may be subservient to the purpose.]

VII. *Of genius.*—[In all invention there must be some end in view: and sagacity in finding out the road that leads to this end, is, I think, what we call invention. In this chiefly, as I apprehend, and in clear and distinct conceptions, consist that superiority of understanding which we call *genius.*]

In every chain of reasoning, the evidence of the last conclusion can be no greater than that of the weakest link of the chain, whatever may be the strength of the rest.

VIII. *Our reasonings distinguishable into two principal kinds.* —[The most remarkable distinction of reasonings is, that some are probable, others demonstrative.]

[In every step of demonstrative reasoning, the inference is necessary, and we perceive it to be impossible that the conclusion should not follow from the premises. In probable reasoning, the connexion between the premises and the conclusion is not neces-

sary, nor do we perceive it to be impossible that the first should be true while the last is false.]

Hence demonstrative reasoning has no degrees, nor can one demonstration be stronger than another, though, in relation to our faculties, one may be more easily comprehended than another. Every demonstration gives equal strength to the conclusion, and leaves no possibility of its being false.

IX. *Demonstrative reasoning applicable to necessary truths only.*—[It was, I think, the opinion of all the ancients, that demonstrative reasoning can be applied only to truths that are necessary, and not to those that are contingent. In this, I believe, they judged right. Of all created things, the existence, the attributes, and consequently the relations resulting from those attributes, are contingent. They depend upon the will and power of him who made them. These are matters of fact, and admit not of demonstration.]

The field of demonstrative reasoning, therefore, is the various relations of things abstract, that is, of things which we conceive, without regard to their existence. Of these, as they are conceived by the mind, and are nothing but what they are conceived to be, we may have a clear and adequate comprehension. Their relations and attributes are necessary and immutable. They are the things to which the Pythagoreans and Platonists gave the name of ideas. I would beg leave to borrow this meaning of the word *idea* from those ancient philosophers, and then I must agree with them, that ideas are the only objects about which we can reason demonstratively.

There are many even of our ideas about which we can carry on no considerable train of reasoning. Though they be ever so well defined and perfectly comprehended, yet their agreements and disagreements are few, and these are discerned at once. We may go a step or two in forming a conclusion with regard to such objects, but can go no farther. There are others, about which we may, by a long train of demonstrative reasoning, arrive at conclusions very remote and unexpected.

X. *Demonstrative reasoning either metaphysical or mathematical.*—[The reasonings I have met with that can be called strictly demonstrative, may, I think, be reduced to two classes. They are either metaphysical, or they are mathematical.]

[In metaphysical reasoning, the process is always short. The conclusion is but a step or two, seldom more, from the first principle or axiom on which it is grounded, and the different conclusions depend not one upon another.

It is otherwise in mathematical reasoning. Here the field has no limits. One proposition leads on to another, that to a third, and so on without end.]

If it should be asked, why demonstrative reasoning has so

wide a field in mathematics, while, in other abstract subjects, it is confined within very narrow limits? ☞ I conceive this is chiefly owing to the nature of quantity, the object of mathematics.

XI. *Cause of the superiority of mathematical reasoning.*—[Every quantity, as it has magnitude, and is divisible into parts without end, so, in respect of its magnitude, it has a certain ratio to every quantity of the kind. The ratios of quantities are innumerable, such as, a half, a third, a tenth, double, triple. All the powers of number are insufficient to express the variety of ratios. For there are innumerable ratios which cannot be perfectly expressed by numbers, such as, the ratio of the side to the diagonal of a square, of the circumference of a circle to the diameter. Of this infinite variety of ratios, every one may be clearly conceived, and distinctly expressed, *so as to be in no danger of being mistaken for any other.*]

Extended quantities, such as lines, surfaces, solids, besides the variety of relations they have in respect of *magnitude*, have no less variety in respect of *figure;* and every mathematical figure may be accurately defined, so as to distinguish it from all others.

There is nothing of this kind in other objects of abstract reasoning. Some of them have various degrees; but these are not capable of measure, nor can be said to have an assignable ratio to others of the kind. They are either simple, or compounded of a few indivisible parts; and therefore, if we may be allowed the expression, can touch only in few points. [But mathematical quantities being made up of parts without number, can touch in innumerable points, and be compared in innumerable different ways.]

There have been attempts made to measure the merit of actions by the ratios of the affections and principles of action from which they proceed. This may perhaps, in the way of analogy, serve to illustrate what was before known; but I do not think any truth can be discovered in this way. There are, no doubt, degrees of benevolence, self-love, and other affections; but, when we apply ratios to them, I apprehend we have no distinct meaning.

XII. *Two species of indirect demonstrations.*—Some *demonstrations are called direct, others indirect.* The first kind leads directly to the conclusion to be proved. Of the indirect some are called (1) demonstrations ad absurdum. In these the proposition contradictory to that which is to be proved is demonstrated to be false, or to lead to an absurdity; whence it follows, that its contradictory, that is, the proposition to be proved, is true. This inference is grounded upon an axiom in logic, That of two contradictory propositions, if one be false, the other must be true.

(2) Another kind of *indirect* demonstration proceeds by

enumerating all the suppositions that can possibly be made concerning the proposition to be proved, and then demonstrating, that all of them, excepting that which is to be proved, are false; whence it follows, that the excepted supposition is true. Thus one line is proved to be equal to another, by proving first that it cannot be greater, and then that it cannot be less: for it must be either greater, or less, or equal; and two of these suppositions being demonstrated to be false, the third must be true.

XIII. *Direct demonstration preferable.*—All these kinds of demonstration are used in mathematics, and perhaps some others. They have all equal strength. The direct demonstration is preferred where it can be had, for this reason only, as I apprehend, ☞ *because it is the shortest road to the conclusion.* The nature of the evidence and its strength is the same in all: only we are conducted to it by different roads.

QUESTIONS FOR EXAMINATION.

Distinction between reasoning and judgment?
Judgment and reasoning why not clearly distinguished by writers on metaphysics?
How do these faculties agree?
Why do we not ascribe the faculty of reasoning to the Almighty?
The exercise of reasoning affords two advantages?
In what does "genius," properly speaking, consist?
How are reasonings to be classed or distinguished?
To what subjects is demonstrative reasoning only applicable?
Two classes of demonstrative reasoning?
Whence the superiority of mathematical reasoning?
Demonstrations reducible to two classes?
Two species of indirect demonstration?
Why is direct demonstration preferred?

CHAPTER II.

WHETHER MORALITY BE CAPABLE OF DEMONSTRATION.

I. *Locke frequently asserts the demonstrability of morality.*—WHAT has been said of demonstrative reasoning may help us to judge of an opinion of Mr. Locke, advanced in several places of his Essay; to wit, "That morality is capable of demonstration as well as mathematics."

In Book III. chap. ii. having observed, that mixed modes, especially those belonging to morality, being such combinations of ideas as the mind puts together of its own choice, the signification of their names may be perfectly and exactly defined, he adds,

Sect. 16: "Upon this ground it is that I am bold to think, that morality is capable of demonstration as well as mathematics:

since the precise real essence of the things moral words stand for may be perfectly known, and so the congruity or incongruity of the things themselves be certainly discovered, in which consists perfect knowledge. Nor let any one object, That the names of substances are often to be made use of in morality, as well as those of modes, from which will arise obscurity: for, as to substances, when concerned in moral discourses, their divers natures are not so much inquired into as supposed: *v. g.* When we say that man is subject to law, we mean nothing by man but a corporeal rational creature: what the real essence or other qualities of that creature are, in this case, is no way considered."

Again, in Book IV. chap. iii. sect. 18: "The idea of a Supreme Being, whose workmanship we are, and the idea of ourselves, being such as are clear in us, would, I suppose, if duly considered and pursued, afford such foundation of our duty and rules of action, as might place morality among the sciences capable of demonstration. The relation of other modes may certainly be perceived, as well as those of number and extension; and I cannot see why they should not be capable of demonstration, if due methods were thought on to examine or pursue their agreement or disagreement."

He afterwards gives as instances, two propositions, as moral propositions of which we may be as certain as of any in mathematics; and considers at large what may have given the advantage to the ideas of quantity, and made them be thought more capable of certainty and demonstration.

Again, in the 12th chapter of the same Book, sect. 7, 8: "This I think I may say, that if other ideas that are the real as well as nominal essences of their several species, were pursued in the way familiar to mathematicians, they would carry our thoughts farther, and with greater evidence and clearness, than possibly we are apt to imagine. This gave me the confidence to advance that conjecture which I suggest, chap. iii. *viz.* That morality is capable of demonstration as well as mathematics."

From these passages it appears, that this opinion was not a transient thought, but what he had revolved in his mind on different occasions. He offers his reasons for it, illustrates it by examples, and considers at length the causes that have led men to think mathematics more capable of demonstration than the principles of morals.

Some of his learned correspondents, particularly his friend Mr. Molyneux, urged and importuned him to compose a system of morals according to the idea he had advanced in his Essay; and, in his answer to these solicitations, he only pleads other occupations, without suggesting any change of his opinion, or any great difficulty in the execution of what was desired.

The reason he gives for this opinion is ingenious; and his regard for virtue, the highest prerogative of the human species, made him fond of an opinion which seemed to be favourable to virtue, and to have a just foundation in reason.

We need not, however, be afraid, that the interest of virtue may suffer by a free and candid examination of this question, or indeed of any question whatever. For the interests of truth and of virtue can never be found in opposition. Darkness and error may befriend vice, but can never be favourable to virtue.

II. *His opinion rejected by a class of moralists.*—[Those philosophers who think that our determinations in morals are not real judgments, that right and wrong in human conduct are only certain feelings or sensations in the person who contemplates the action, must reject Mr. Locke's opinion without examination. For if the principles of morals be not a matter of judgment, but of feeling only, there can be no demonstration of them; nor can any other reason be given for them, but that men are so constituted by the Author of their being, as to contemplate with pleasure the actions we call virtuous, and with disgust those we call vicious.]

It is not therefore to be expected, that the philosophers of this class should think this opinion of Mr. Locke worthy of examination, since it is founded upon what they think a false hypothesis. But if our determinations in morality be real judgments, and, like all other judgments, be either true or false, it is not unimportant to understand upon what kind of evidence those judgments rest.

The argument offered by Mr. Locke, to show that morality is capable of demonstration, is, "That the precise real essence of the things moral words stand for may be perfectly known, and so the congruity or incongruity of the things themselves be perfectly discovered, in which consists perfect knowledge."

It is true, that the field of demonstration is the various relations of things conceived abstractly, of which we may have perfect and adequate conceptions. And Mr. Locke, taking all the things which moral words stand for to be of this kind, concluded that morality is as capable of demonstration as mathematics.

III. *Certain moral relations admit of perfect demonstration.*—[I acknowledge, that the *names* of the virtues and vices, of right and obligation, of liberty and property, stand for things abstract, which may be accurately defined, or, at least, conceived as distinctly and adequately as mathematical quantities. And thence, indeed, it follows, that their mutual relations may be perceived as clearly and certainly as mathematical truths.]

Of this Mr. Locke gives two pertinent examples: the first, "where there is no property, there is no injustice, is," says he, "a proposition as certain as any demonstration in Euclid."

When injustice is defined to be a violation of property, it is as necessary a truth, that there can be no injustice where there is no property, as that you cannot take from a man that which he has not.

The second example is, " That no government allows absolute liberty." This is a truth no less certain and necessary.

IV. *Real nature of the examples given by Locke.*—[Such abstract truths I would call metaphysical rather than moral. We give the name of mathematical to truths that express the relations of quantities considered abstractly; all other abstract truths may be called metaphysical.] But if those mentioned by Mr. Locke are to be called moral truths, I agree with him that there are many such that are necessarily true, and that have all the evidence that mathematical truths can have.

[It ought, however, to be remembered, that, as was before observed, the relations of things abstract, perceivable by us, excepting those of mathematical quantities, are few, and for the most part immediately discerned, so as not to require that train of reasoning which we call demonstration. Their evidence resembles more that of mathematical *axioms* than mathematical *propositions.*]

This appears in the two propositions given as examples by Mr. Locke. The first follows immediately from the definition of injustice; the second from the definition of government. Their evidence may more properly be called intuitive than demonstrative. And this I apprehend to be the case, or nearly the case, of all abstract truths that are not mathematical, for the reason given in the last chapter.

V. *Demonstration not applicable to propositions properly called moral.*—[The *propositions* which I think are *properly called moral*, are those that affirm some moral obligation to be, or not to be incumbent on one or more individual persons.] [To such propositions Mr. Locke's reasoning does not apply, because the subjects of the proposition are not things whose real essence may be perfectly known. They are the creatures of God; their obligation results from the *constitution* which God hath given them, and the *circumstances* in which he hath placed them. That an individual hath such a constitution, and is placed in such circumstances, is not an abstract and necessary, but a contingent truth. It is a matter of fact, and therefore not capable of demonstrative evidence, which belongs only to necessary truths.]

The evidence which every man hath of his own existence, though it be irresistible, is not demonstrative. And the same thing may be said of the evidence which every man hath, that he is a moral agent, and under certain moral obligations. In like manner, the evidence we have of the existence of other men is

not demonstrative; nor is the evidence we have of their being endowed with those faculties which make them moral and accountable agents.

VI. *Of the moral sense.*—If a man had not the faculty given him by God of perceiving certain things in conduct to be right, and others to be wrong, and of perceiving his obligation to do what is right, and not to do what is wrong, he would not be a moral and accountable being.

If man be endowed with such a faculty, there must be some things which, by this faculty, are immediately discerned to be right, and others to be wrong; and therefore there must be in morals, as in other sciences, first principles, which do not derive their evidence from any antecedent principles, but may be said to be intuitively discerned.

VII. *Two classes of moral truths.*—[Moral truths, therefore, may be divided into two classes, to wit, such as are self-evident to every man whose understanding and moral faculty are ripe, and such as are deduced by reasoning from those that are self-evident. If the first be not discerned without reasoning, the last never can be by any reasoning.]

If any man could say with sincerity, that he is conscious of no obligation to consult his own present and future happiness; to be faithful to his engagements; to obey his Maker; to injure no man; I know not what reasoning, either probable or demonstrative, I could use to convince him of any moral duty. As you cannot reason in mathematics with a man who denies the axioms, as little can you reason with a man in morals who denies the first principles of morals. The man who does not, by the light of his own mind, perceive some things in conduct to be right, and others to be wrong, is as incapable of reasoning about morals as a blind man is about colours. Such a man, if any such man ever was, would be no moral agent, nor capable of any moral obligation.

Some first principles of morals must be immediately discerned, otherwise we have no foundation on which others can rest, or from which we can reason.

Every man knows certainly, that, what he approves in other men he ought to do in like circumstances, and that he ought not to do what he condemns in other men. Every man knows that he ought, with candour, to use the best means of knowing his duty. To every man who has a conscience, these things are self-evident. They are immediate dictates of our moral faculty, which is a part of the human constitution; and every man condemns himself, whether he will or not, when he knowingly acts contrary to them. The evidence of these fundamental principles of morals, and of others that might be named, appears therefore to me to be intuitive rather than demonstrative.

The man who acts according to the dictates of his conscience, and takes due pains to be rightly informed of his duty, is a perfect man with regard to morals, and merits no blame, whatever may be the imperfections or errors of his understanding. He who knowingly acts contrary to them is conscious of guilt, and self-condemned. Every particular action that falls evidently within the fundamental rules of morals is evidently his duty; and it requires no reasoning to convince him that it is so.

VIII. *Some necessity for reasoning exists in ethics.*—[Thus I think it appears, that every man of common understanding knows certainly, and without reasoning, the ultimate ends he ought to pursue, and that reasoning is necessary *only to discover the most proper means of attaining them;* and in this, indeed, a good man may often be in doubt.]

Thus, a magistrate knows that it is his duty to promote the good of the community which hath entrusted him with authority; and to offer to prove this to him by reasoning would be to affront him. But whether such a scheme of conduct in his office, or another, may best serve that end, he may in many cases be doubtful. [I believe, in such cases, he can very rarely have demonstrative evidence. His *conscience* determines the end he ought to pursue, and he has intuitive evidence that his end is good; but prudence must determine the means of attaining that end; and prudence can very rarely use demonstrative reasoning, but must rest in what appears most *probable.*]

[I apprehend, that in every kind of duty we owe to God or man, the case is similar; that is, That the obligation of the *most general* rules of duty is self-evident; that the application of those rules to particular actions is often no less evident; and that, when it is not evident, but requires reasoning, that reasoning can very rarely be of the demonstrative, but must be of the probable kind. Sometimes it depends upon the temper and talents and circumstances of the man himself; sometimes upon the character and circumstances of others; sometimes upon both; and these are things which admit not of demonstration.]

Every man is bound to employ the talents which God hath given him to the best purpose; but if, through accidents which he could not foresee, or ignorance which was invincible, they be less usefully employed than they might have been, this will not be imputed to him by his righteous Judge.

IX. *The success of a virtuous enterprise does not depend on superior reasoning.*—[It is a common and a just observation, that the man of virtue plays a surer game in order to obtain his end than the man of the world. It is not, however, because he *reasons* better concerning the means of attaining his end; for the children of this world are often wiser in their generation than the children of light. But the reason of the observation

is, that involuntary errors, unforeseen accidents, and invincible ignorance, which affect deeply all the concerns of the present world, have no effect upon virtue or its reward.]

In the common occurrences of life, a man of integrity, who hath exercised his moral faculty in judging what is right and what is wrong, sees his duty without reasoning, as he sees the highway. The cases that require reasoning are few, compared with those that require none; and a man may be very honest and virtuous who cannot reason, and who knows not what demonstration means.

☞ The power of reasoning, in those that have it, may be abused in morals, as in other matters. To a man who uses it with an upright heart, and a single eye to find what is his duty, it will be of great use; but when it is used to justify what a man has a strong inclination to do, it will only serve to deceive himself and others. When a man can reason, his passions will reason, and they are the most cunning sophists we meet with.

X. *And this to answer a wise purpose.*—[If the rules of virtue were left to be discovered by demonstrative reasoning, or by reasoning of any kind, sad would be the condition of the far greater part of men, who have not the means of cultivating the power of reasoning. As virtue is the business of all men, the first principles of it are written in their hearts, in characters so legible, that no man can pretend ignorance of them, or of his obligation to practise them.]

Some knowledge of duty and of moral obligation is necessary to all men. Without it they could not be moral and accountable creatures, nor capable of being members of civil society. It may therefore be presumed, that nature has put this knowledge within the reach of all men. Reasoning and demonstration are weapons which the greatest part of mankind never was able to wield. The knowledge that is necessary to all, must be attainable by all. We see it is so in what pertains to the natural life of man.

Some knowledge of things that are useful, and things that are hurtful, is so necessary to all men, that without it the species would soon perish. But it is not by reasoning that this knowledge is got, far less by demonstrative reasoning. It is by our senses, by memory, by experience, by information; means of knowledge that are open to all men, and put the learned and the unlearned, those who can reason and those who cannot, upon a level.

XI. *Besides being conformable to the analogy of nature.*—[It may, therefore, be expected from *the analogy of nature*, that such a knowledge of morals as is necessary to all men, should be had by means more suited to the abilities of all men than demonstrative reasoning is.]

This, I apprehend, is in fact the case. When men's faculties are ripe, the first principles of morals, into which all moral reasoning may be resolved, are perceived intuitively, and in a manner more analogous to the perceptions of sense than to the conclusions of demonstrative reasoning.

XII. ☞ Upon the whole, I agree with Mr. Locke, that *propositions expressing the congruities and incongruities of things abstract, which moral words stand for, may have all the evidence of mathematical truths.* ☞ But this is not peculiar to things which moral words stand for. It is common to abstract propositions of every kind. For instance, you cannot take from a man what he has not. A man cannot be bound and perfectly free at the same time. I think no man will call these moral truths, but they are necessary truths, and as evident as any in mathematics. Indeed, they are very nearly allied to the two which Mr. Locke gives as instances of moral propositions capable of demonstration. Of such abstract propositions, I think it may more properly be said, that they have the evidence of mathematical axioms, than that they are capable of demonstration.

There are propositions of another kind, which alone deserve the name of moral propositions. They are such as affirm something to be the duty of persons that really exist. These are not abstract propositions; and therefore Mr. Locke's reasoning does not apply to them. The truth of all such propositions depends upon the constitution and circumstances of the persons to whom they are applied.

XIII. *This defect of demonstration no impediment to the cause of virtue.*—Of such propositions, there are some that are self-evident to every man *that has a conscience;* and these are the principles from which all moral reasoning must be drawn. They may be called the axioms of morals. But our reasoning from these axioms to any duty that is not self-evident, can very rarely be demonstrative. [Nor is this any detriment to the cause of virtue, (1) because to act against what appears most probable in a matter of duty, is as real a trespass against the first principles of morality, as to act against demonstration; and (2) because he who has but one talent in reasoning, and makes the proper use of it, shall be accepted, as well as he to whom God has given ten.]

QUESTIONS FOR EXAMINATION.

The opinion of Locke as to the demonstrability of morality, why rejected by certain philosophers?

How far does morality admit of mathematical certainty?

Description of propositions quoted by Locke?

Metaphysical propositions different from mathematical?

What propositions properly called moral?
Why is not demonstration applicable to them?
Two classes of moral truths?
When is reasoning necessary in ethics?
The success of virtue not due to reasoning?
This disposition for a wise end?
And conformable to the analogy of nature?
The inapplicability of demonstration has not been detrimental to the cause of virtue?

CHAPTER III.

OF PROBABLE REASONING.

I. *Three distinctions between demonstrative and probable evidence.*—THE field of demonstration, as has been observed, is necessary truth; the field of probable reasoning is contingent truth, not what necessarily must be at all times, but what is, or was, or shall be.

[(1) No contingent truth is capable of strict demonstration; but necessary truths may sometimes have probable evidence.]

Dr. Wallis discovered many important mathematical truths, by that kind of induction which draws a general conclusion from particular premises. This is not strict demonstration, but, in some cases, gives as full conviction as demonstration itself; and a man may be certain, that a truth is demonstrable before it ever has been demonstrated. In other cases, a mathematical proposition may have such probable evidence from induction or analogy, as encourages the mathematician to investigate its demonstration. [But still the reasoning proper to mathematical and other necessary truths, is demonstration; and that which is proper to contingent truths, is probable reasoning.]

[(2) These two kinds of reasoning differ in other respects. In demonstrative reasoning, one argument is as good as a thousand.] One demonstration may be more elegant than another; it may be more easily comprehended, or it may be more subservient to some purpose beyond the present. On any of these accounts it may deserve a preference: but then it is sufficient by itself; it needs no aid from another; it can receive none. To add more demonstrations of the same conclusion, would be a kind of tautology in reasoning; because one demonstration, clearly comprehended, gives all the evidence we are capable of receiving.

[The strength of probable reasoning, for the most part, depends not upon any one argument, but upon many, which unite their force, and lead to the same conclusion.] Any one of them by itself would be insufficient to convince; but the whole taken together may have a force that is irresistible, so that to desire

more evidence would be absurd. Would any man seek new arguments to prove that there were such persons as King Charles the First, or Oliver Cromwell?

☞ Such evidence may be compared to a rope made up of many slender filaments twisted together. The rope has strength more than sufficient to bear the stress laid upon it, though no one of the filaments of which it is composed would be sufficient for that purpose.

It is a common observation, that it is unreasonable to require demonstration for things which do not admit of it. It is no less unreasonable to require reasoning of any kind for things which are known without reasoning. All reasoning must be grounded upon truths which are known without reasoning. In every branch of real knowledge there must be first principles whose truth is known intuitively; without reasoning, either probable or demonstrative. They are not grounded on reasoning, but all reasoning is grounded on them. It has been shown, that there are first principles of necessary truths, and first principles of contingent truths. Demonstrative reasoning is grounded upon the former, and probable reasoning upon the latter.

That we may not be embarrassed by the ambiguity of words, it is proper to observe, that there is a popular meaning of †*probable evidence*, which ought not to be confounded with the philosophical meaning above explained.

II. *In vulgar language, probable evidence is opposed to certainty, in philosophic, to demonstration.*—[In common language, probable evidence is considered as an inferior *degree* of evidence, and is *opposed to certainty:* so that what is certain is more than probable, and what is only probable is not certain. Philosophers consider probable evidence, not as a degree, but as *a species* of evidence which is opposed, not to certainty, but to another species of evidence called *demonstration.*]

[(3) Demonstrative evidence has no degrees; but probable evidence, taken in the philosophical sense, has all degrees, from the very least, to the greatest which we call certainty.]

☞ That there is such a city as Rome, I am as certain as of any proposition in Euclid; but the evidence is not demonstrative, but of that kind which philosophers call probable. Yet, in common language, it would sound oddly to say, it is probable there is such a city as Rome, because it would imply some degree of doubt or uncertainty.

Taking probable evidence, therefore, in the philosophical sense, as it is opposed to demonstration, it may have any degree of evidence, from the least to the greatest.

I think, in most cases, we measure the degrees of evidence by the effect they have upon a sound understanding, when comprehended clearly, and without prejudice. Every degree of evidence

perceived by the mind, produces a proportioned degree of assent or belief. The judgment may be in perfect suspense between two contradictory opinions, when there is no evidence for either, or equal evidence for both. The least preponderancy on one side inclines the judgment in proportion. Belief is mixed with doubt, more or less, until we come to the highest degree of evidence, when all doubt vanishes, and the belief is firm and immoveable. This degree of evidence, the highest the human faculties can attain, we call certainty.

Probable evidence not only differs in kind from demonstrative, but is itself of different kinds. The chief of these I shall mention, without pretending to make a complete enumeration.

III. *Of probable evidence.*—[The first kind * is that of *human testimony*, upon which the greatest part of human knowledge is built.

The faith of history depends upon it, as well as the judgment of solemn tribunals, with regard to men's acquired rights, and with regard to their guilt or innocence when they are charged with crimes.] A great part of the business of the judge, of counsel at the bar, of the historian, the critic, and the antiquarian, is to canvass and weigh this kind of evidence; and no man can act with common prudence, in the ordinary occurrences of life, who has not some competent judgment of it.

The belief we give to testimony, in many cases, is not solely grounded upon the veracity of the testifier. In a single testimony, we consider the motives a man might have to falsify. If there be no appearance of any such motive, much more if there be motives on the other side, his testimony has weight independent of his moral character. If the testimony be circumstantial, we consider how far the circumstances agree together, and with things that are known. It is so very difficult to fabricate a story, which cannot be detected by a judicious examination of the circumstances, that it acquires evidence, by being able to bear such a trial. There is an art in detecting false evidence in judicial proceedings, well known to able judges and barristers; so that I believe few false witnesses leave the bar without suspicion of their guilt.

When there is an agreement of many witnesses, in a great variety of circumstances, without the possibility of a previous concert, the evidence may be equal to that of demonstration.

[(2) A second kind of probable evidence, is the *authority* of those who are good judges of the point in question.] ☞ The supreme court of judicature of the British nation, is often determined by the opinion of lawyers in a point of law, of physicians

* There are seven kinds, derived from (1) human testimony; (2) authority; (3) identity; (4) conjecture by analogy; (5) deduction as to character from external signs; (6) the doctrine of chances; (7) discovery of the laws of nature.

in a point of medicine, and of other artists, in what relates to their several professions. And, in the common affairs of life, we frequently rely upon the judgment of others, in points of which we are not proper judges ourselves.

[(3) A third kind of probable evidence, is that by which we recognise the *identity* of things, and persons of our acquaintance.] ☞ That two swords, two horses, or two persons, may be so perfectly alike, as not to be distinguishable by those to whom they are best known, cannot be shown to be impossible. But we learn either from nature, or from experience, that it never happens; or so very rarely, that a person or thing, well known to us, is immediately recognised without any doubt, when we perceive the marks or signs by which we were in use to distinguish it from all other individuals of the kind.

This evidence we rely upon in the most important affairs of life; and, by this evidence, the identity, both of things and of persons, is determined in courts of judicature.

[(4) A fourth kind of probable evidence, is that which we have of *men's future actions* and conduct, from the general principles of action in man, or from our knowledge of the individuals.]

Notwithstanding the folly and vice that are to be found among men, there is a certain degree of prudence and probity which we rely upon in every man that is not insane. If it were not so, no man would be safe in the company of another, and there could be no society among mankind. If men were as much disposed to hurt as to do good, to lie as to speak truth, they could not live together: they would keep at as great distance from one another as possible, and the race would soon perish.

We expect that men will take some care of themselves, of their family, friends, and reputation; that they will not injure others without some temptation. That they will have some gratitude for good offices, and some resentment of injuries.

Such maxims with regard to human conduct are the foundation of all political reasoning, and of common prudence in the conduct of life. Hardly can a man form any project in public or in private life, which does not depend upon the conduct of other men, as well as his own, and which does not go upon the supposition that men will act such a part in such circumstances. This evidence may be probable in a very high degree, but can never be demonstrative. The best concerted project may fail, and wise counsels may be frustrated, because some individual acted a part which it would have been against all reason to expect.

[(5) Another kind of probable evidence, the counterpart of the last, is that by which we collect *men's characters* and designs from their actions, speech, and other external signs.]

We see not men's hearts, nor the principles by which they are

tuated; but there are external signs of their principles and dispositions, which, though not certain, may sometimes be more trusted than their professions; and it is from external signs that we must draw all the knowledge we can attain of men's characters.

[(6) The next kind of probable evidence I mention, is that which mathematicians call *the probability of chances.*]

We attribute some events to chance, because we know only the remote cause which must produce some one event of a number, but know not the more immediate cause which determines the particular event of that number, in preference to the others.

All the chances about which we reason in mathematics are of this kind. Thus, in throwing a just die upon a table, we say there is an equal chance which of the six sides shall be turned up; because neither the person who throws, nor the bystanders know the precise measure of force and direction necessary to turn up any one side rather than another. There are here, therefore, six events, one of which must happen; and as all are supposed to have equal probability, the probability of any one side being turned up, the ace, for instance, is as one to the remaining number, five.

The probability of turning up two aces with two dice is as one to thirty-five; because here there are thirty-six events, each of which has equal probability.

IV. *The doctrine of chances favours the belief that demonstrative reason may be applied to contingent truths.*—[Upon such principles as these, the doctrine of chances has furnished a field of demonstrative reasoning of great extent, although the events about which this reasoning is employed be not necessary, but contingent, and be not certain, but probable.

This may seem to contradict a principle before advanced, that contingent truths are not capable of demonstration; but it does not: for in the mathematical reasonings about chance, the conclusion demonstrated, is not, that such an event shall happen, but that *the probability of its happening* bears such a ratio to the probability of its failing; and this conclusion is necessary upon the suppositions on which it is grounded.]

[(7) The last kind of probable evidence I shall mention, is that by which the known *laws of nature have been discovered,* and the effects which have been produced by them in former ages, or which may be expected in time to come.]

☞ The laws of nature are the rules by which the Supreme Being governs the world. We deduce them only from facts that fall within our own observation, or are properly attested by those who have observed them.

The knowledge of some of the laws of nature is necessary to all men in the conduct of life. These are soon discovered, even by savages. They know that fire burns, that water drowns,

that bodies gravitate towards the earth. They know that day and night, summer and winter, regularly succeed each other. As far back as their experience and information reach, they know that these have happened regularly; and, upon this ground, they are led, by the constitution of human nature, to expect that they will happen in time to come, in like circumstances.

V. *The acquaintance which the philosopher has with the laws of nature exceeds the vulgar knowledge in extent and accuracy.*—[The knowledge which the philosopher attains of the laws of nature differs from that of the vulgar, not in the first principles on which it is grounded, but in its extent and accuracy.*] He collects with care the phenomena that lead to the same conclusion, and compares them with those that seem to contradict or to limit it. He observes the circumstances on which every phenomenon depends, and distinguishes them carefully from those that are accidentally conjoined with it. He puts natural bodies in various situations, and applies them to one another in various ways, on purpose to observe the effect; and thus acquires from his senses a more extensive knowledge of the course of nature in a short time, than could be collected by casual observation in many ages.

But what is the result of his laborious researches? It is, that, as far as he has been able to observe, such things have always happened in such circumstances, and such bodies have always been found to have such properties. These are matters of fact, attested by sense, memory and testimony, just as the few facts which the vulgar know are attested to them.

And what conclusions does the philosopher draw from the facts he has collected? They are, that like events have happened in former times in like circumstances, and will happen in time to come; and these conclusions are built on the very same ground on which the simple rustic concludes that the sun will rise to-morrow.

Facts reduced to general rules, and the consequences of those general rules, are all that we really know of the material world. And the evidence that such general rules have no exceptions, as well as the evidence that they will be the same in time to come as they have been in time past, can never be demonstrative. It is only that species of evidence which philosophers call probable. General rules may have exceptions or limitations which no man ever had occasion to observe. The laws of nature may be changed by Him who established them. But we are led by our constitution to rely upon their continuance with as little doubt as if it was demonstrable.

I pretend not to have made a complete enumeration of all the kinds of probable evidence; but those I have mentioned

* To this conclusion Berkeley assents

are sufficient to show, that the far greatest part, and the most interesting part of our knowledge, must rest upon evidence of this kind; and that many things are certain for which we have only that kind of evidence which philosophers call probable.

QUESTIONS FOR EXAMINATION.

Demonstration differs from probable reasoning?
Of what two meanings does probable evidence admit?
Seven kinds of probable evidence?
Does it appear from the doctrine of chances that demonstrative reasoning is applicable to contingent events?
How does the philosophic knowledge of nature's laws differ from the vulgar?

CHAPTER IV.

OF MR. HUME'S SCEPTICISM WITH REGARD TO REASON.

I. *Hume's arguments in support of scepticism.*—IN the "Treatise of Human Nature," Book I. part iv. sect. i., the author undertakes to prove two points: [*First,* That all that is called human knowledge (meaning demonstrative knowledge) is only probability; and, *secondly,* That this probability, when duly examined, evanishes by degrees, and leaves at last no evidence at all: so that, in the issue, there is no ground to believe any one proposition rather than its contrary, and "all those are certainly fools who reason, or believe any thing."]

According to this account, reason, that boasted prerogative of man, and the light of his mind, is an ignis fatuus, which misleads the wandering traveller, and leaves him at last in absolute darkness.

How unhappy is the condition of man, born under a necessity of believing contradictions, and of trusting to a guide who confesses herself to be a false one!

It is some comfort, that this doctrine can never be seriously adopted by any man in his senses. And after this author had shown that "all the rules of logic require a total extinction of all belief and evidence," he himself and all men that are not insane, must have believed many things, and yielded assent to the evidence which he had extinguished.

This indeed he is so candid as to acknowledge. "He finds himself absolutely and necessarily determined, to live and talk and act like other people in the common affairs of life. And since reason is incapable of dispelling these clouds, most fortunately it happens, that nature herself suffices to that purpose, and cures him of this philosophical melancholy and delirium." See sect. 7.

This was surely a very kind and friendly interposition of nature; for the effects of this philosophical delirium, if carried into life, must have been very melancholy.

But what pity is it, that nature, (whatever is meant by that personage,) so kind in curing this delirium, should be so cruel as to cause it. Doth the same fountain send forth sweet waters and bitter? Is it not more probable, that if the cure was the work of nature, the disease came from another hand, and was the work of the philosopher?

[To pretend to prove by reasoning that there is no force in reason, does indeed look like a philosophical delirium. It is like a man's pretending to see clearly, that he himself and all other men are blind.]

A common symptom of delirium is, to think that all other men are fools or mad. This appears to have been the case of our author, who concluded, "That all those are certainly fools who reason, or believe anything."

Whatever was the cause of this delirium, it must be granted, that if it was real and not feigned, it was not to be cured by reasoning: For what can be more absurd than to attempt to convince a man by reasoning who disowns the authority of reason? It was therefore very fortunate that nature found other means of curing it.

It may, however, not be improper to inquire, whether, as the author thinks, it was produced by a just application of the rules of logic, or, as others may be apt to think, by the misapplication and abuse of them.

II. *He reduces all knowledge to probability.*—[*First*, Because we are fallible, the author infers that all knowledge degenerates into probability.]

That man, and probably every created being, is fallible; and that a fallible being cannot have that perfect comprehension and assurance of truth which an infallible being has, I think ought to be granted. It becomes a fallible being to be modest, open to new light, and sensible, that by some false bias, or by rash judging, he may be misled. If this be called a degree of scepticism, I cannot help approving of it, being persuaded, that the man who makes the best use he can of the faculties which God has given him, without thinking them more perfect than they really are, may have all the belief that is necessary in the conduct of life, and all that is necessary to his acceptance with his Maker.

It is granted then, that human judgments ought always to be formed with an humble sense of our fallibility in judging.

This is all that can be inferred by the rules of logic from our being fallible. And if this be all that is meant by our know-

ledge degenerating into probability, I know no person of a different opinion.

III. *Peculiar sense in which he uses the term probability.*—[But it may be observed, that the author here uses the word probability in a sense for which I know no authority but his own. Philosophers understand probability as *opposed to demonstration;* the vulgar as *opposed to certainty ;* but this author understands it as *opposed to infallibility*, which no man claims.]

One who believes himself to be fallible, may still hold it to be certain that two and two make four, and that two contradictory propositions cannot both be true. He may believe some things to be probable only, and other things to be demonstrable, without making any pretence to infallibility.

IV. *Demonstration does not degenerate into probability, but ceases to be a proof of any kind.*—If we use words in their proper meaning, it is impossible that demonstration should degenerate into probability from the imperfection of our faculties. Our judgment cannot change the nature of the things about which we judge. What is really demonstration, will still be so, whatever judgment we form concerning it. [It may likewise be observed, that when we mistake that for demonstration, which really is not, the consequence of this mistake is, *not* that demonstration degenerates into probability, but that what we took to be demonstration is no proof at all; for one false step in a demonstration destroys the whole, but cannot turn it into another kind of proof.]

V. *Absurdity of the supposition that all demonstrative knowledge is only probability.*—[Upon the whole, then, this first conclusion of our author, That the fallibility of human judgment turns all knowledge into probability, if understood literally, is absurd; but if it be only a figure of speech, and means no more, but that, in all our judgments, we ought to be sensible of our fallibility, and ought to hold our opinions with that modesty that becomes fallible creatures, which I take to be what the author meant, this, I think, nobody denies, nor was it necessary to enter into a laborious proof of it.]

One is never in greater danger of transgressing against the rules of logic, than in attempting to prove what needs no proof. Of this we have an instance in this very case: For the author begins his proof, that all human judgments are fallible, with affirming that some are infallible.

VI. *Supposed cause of error in demonstrative sciences.*—["In all demonstrative sciences," says he, "the rules are certain and infallible; but when we apply them, our fallible and uncertain faculties are very apt to depart from them, and fall into error."

He had forgot, surely, that the rules of demonstrative sciences are discovered by our fallible and uncertain faculties, and have no authority but that of human judgment. If they be infallible, some human judgments are infallible; and there are many in various branches of human knowledge which have as good a claim to infallibility as the rules of the demonstrative sciences.]

We have reason here to find fault with our author for not being sceptical enough, as well as for a mistake in reasoning, when he claims infallibility to certain decisions of the human faculties, in order to prove that all their decisions are fallible.

VII. *This probability gradually evanishes.*—[The *second* point which he attempts to prove is, That *this probability*, when duly examined, suffers a *continual diminution*, and at last a total extinction.

The obvious consequence of this is, that no fallible being can have good reason to believe anything at all; but let us hear the proof.

"In every judgment, we ought to correct the first judgment derived from the nature of the object, by another judgment derived from the nature of the understanding. Beside the original uncertainty inherent in the subject, there arises another, derived from the weakness of the faculty which judges. Having adjusted these two uncertainties together, we are obliged, by our reason, to add a new uncertainty, derived from the possibility of error in the estimation we make of the truth and fidelity of our faculties. This is a doubt, of which, if we would closely pursue our reasoning, we cannot avoid giving a decision. But this decision, though it should be favourable to our preceding judgment, being founded only on probability, must weaken still further our first evidence. The third uncertainty must in like manner be criticised by a fourth, and so on without end.]

"Now, as every one of these uncertainties takes away a part of the original evidence, it must at last be reduced to nothing. Let our first belief be ever so strong, it must infallibly perish, by passing through so many examinations, each of which carries off somewhat of its force and vigour. No finite object can subsist under a decrease repeated in infinitum.

"When I reflect on the natural fallibility of my judgment, I have less confidence in my opinions, than when I only consider the objects concerning which I reason. And when I proceed still further, to turn the scrutiny against every successive estimation I make of my faculties, all the rules of logic require a continual diminution, and at last a total extinction of belief and evidence."

This is the author's Achillean argument against the evidence of reason, from which he concludes, that a man who would govern his belief by reason, must believe nothing at all, and that

belief is an act, not of the cogitative, but of the sensitive part of our nature.

If there be any such thing as motion, said an ancient sceptic, the swift-footed Achilles could never overtake an old man in a journey. For, suppose the old man to set out a thousand paces before Achilles, and that while Achilles has travelled the thousand paces, the old man has got five hundred; when Achilles has gone the five hundred, the old man has gone two hundred and fifty; and when Achilles has gone the two hundred and fifty, the old man is still one hundred and twenty-five before him. Repeat these estimations in infinitum, and you will still find the old man foremost; therefore Achilles can never overtake him; therefore there can be no such thing as motion.

VIII. *Illustration of modern scepticism.*—The reasoning of the modern sceptic against reason is equally ingenious, and equally convincing. Indeed, they have a great similarity.

☞ If we trace the journey of Achilles two thousand paces, we shall find the very point where the old man is overtaken: but this short journey, by dividing it into an infinite number of stages, with corresponding estimations, is made to appear infinite. In like manner, our author, subjecting every judgment to an infinite number of successive probable estimations, reduces the evidence to nothing.

To return, then, to the argument of the modern sceptic. I examine the proof of a theorem of Euclid. It appears to me to be strict demonstration. But I may have overlooked some fallacy; therefore I examine it again and again, but can find no flaw in it. I find all that have examined it agree with me. I have now that evidence of the truth of the proposition, which I and all men call demonstration, and that belief of it, which we call certainty.

Here my sceptical friend interposes, and assures me, that the rules of logic reduce this demonstration to no evidence at all. I am willing to hear what step in it he thinks fallacious, and why. He makes no objection to any part of the demonstration, but pleads my fallibility in judging. I have made the proper allowance for this already, by being open to conviction. "But," says he, "there are two uncertainties, the first inherent in the subject, which I have already shown to have only probable evidence; the second arising from the weakness of the faculty that judges." I answer, it is the weakness of the faculty only that reduces this demonstration to what you call probability. You must not, therefore, make it a second uncertainty; for it is the same with the first. To take credit twice in an account for the same article is not agreeable to the rules of logic. Hitherto, therefore, there is but one uncertainty, to wit, my fallibility in judging.

"But," says my friend, "you are obliged by reason to add a new uncertainty, derived from the possibility of error in the estimation you make of the truth and fidelity of your faculties." I answer, This estimation is ambiguously expressed; it may either mean an estimation of my liableness to err by the misapplication and abuse of my faculties, or it may mean an estimation of my liableness to err, by conceiving my faculties to be true and faithful, while they may be false and fallacious in themselves, even when applied in the best manner. I shall consider this estimation in each of these senses.

If the first be the estimation meant, it is true that reason directs us, as fallible creatures, to carry along with us, in all our judgments, a sense of our fallibility. It is true, also, that we are in greater danger of erring in some cases, and less in others; and that this danger of erring may, according to the circumstances of the case, admit of an estimation, which we ought likewise to carry along with us in every judgment we form.

When a demonstration is short and plain; when the point to be proved does not touch our interest or our passions; when the faculty of judging in such cases, has acquired strength by much exercise, there is less danger of erring; when the contrary circumstances take place, there is more.

In the present case, every circumstance is favourable to the judgment I have formed. There cannot be less danger of erring in any case, excepting perhaps when I judge of a self-evident axiom.

The sceptic further urges, that this decision, though favourable to my first judgment, being founded only on probability, must still weaken the evidence of that judgment.

Here I cannot help being of a quite contrary opinion, nor can I imagine how an ingenious author could impose upon himself so grossly, for surely he did not intend to impose upon his reader.

After repeated examination of a proposition of Euclid, I judge it to be strictly demonstrated; this is my first judgment. But as I am liable to err from various causes, I consider how far I may have been misled by any of these causes in this judgment. My decision upon this second point is favourable to my first judgment, and therefore, as I apprehend, must strengthen it. To say, that this decision, because it is only probable, must weaken the first evidence, seems to me contrary to all rules of logic and to common sense.

The first judgment may be compared to the testimony of a credible witness; the second, after a scrutiny into the character of the witness, wipes off every objection that can be made to it, and therefore surely must confirm and not weaken his testimony.

But let us suppose, that, in another case, I examined my first judgment upon some point, and find, that it was attended with unfavourable circumstances. What, in reason, and according to the rules of logic, ought to be the effect of this discovery?

The effect surely will be, and ought to be, to make me less confident in my first judgment, until I examine the point anew in more favourable circumstances. If it be a matter of importance I return to weigh the evidence of my first judgment. If it was precipitate before, it must now be deliberate in every point. If at first I was in passion, I must now be cool. If I had an interest in the decision, I must place the interest on the other side.

It is evident, that this review of the subject may confirm my first judgment, notwithstanding the suspicious circumstances that attended it. Though the judge was biassed or corrupted, it does not follow, that the sentence was unjust. The rectitude of the decision does not depend upon the character of the judge, but upon the nature of the case. From that only, it must be determined whether the decision be just. The circumstances that rendered it suspicious are mere presumptions, which have no force against direct evidence.

Thus, I have considered the effect of this estimation of our liableness to err in our first judgment, and have allowed to it all the effect that reason and the rules of logic permit. In the case I first supposed, and in every case where we can discover no cause of error, it affords a presumption in favour of the first judgment. In other cases, it may afford a presumption against it. But the rules of logic require, that we should not judge by presumptions, where we have direct evidence. The effect of an unfavourable presumption should only be, to make us examine the evidence with the greater care.

The sceptic urges, in the last place, that this estimation must be subjected to another estimation, that to another, and so on in infinitum; and as every new estimation takes away from the evidence of the first judgment, it must at last be totally annihilated.

IX. ☞ I answer, *first*, it has been shown above, that the first estimation, supposing it unfavourable, can only afford a presumption against the first judgment; the second, upon the same supposition, will be only the presumption of a presumption; and the third, the presumption that there is a presumption of a presumption. This infinite series of presumptions resembles an infinite series of quantities decreasing in geometrical proportion, which amounts only to *a finite sum*. The infinite series of stages of Achilles' journey after the old man, amounts only to two thousand paces; nor can this infinite series of presumptions out-

weigh one solid argument in favour of the first judgment, supposing them all to be unfavourable to it.

Secondly, I have shown, that the estimation of our first judgment may strengthen it; and the same thing may be said of all the subsequent estimations. It would, therefore, be as reasonable to conclude, that the first judgment will be brought to infallible certainty when this series of estimations is wholly in its favour, as that its evidence will be brought to nothing by such a series supposed to be wholly unfavourable to it. But, in reality, one serious and cool re-examination of the evidence by which our first judgment is supported, has, and, in reason, ought to have more force to strengthen or weaken it, than an infinite series of such estimations as our author requires.

Thirdly, I know no reason nor rule in logic, that requires that such a series of estimations should follow every particular judgment.

X. *Hume's hypothesis not applicable to those who possess common sense, and think proper to exert it, on every occasion.*—A wise man who has practised reasoning knows that he is fallible, and carries this conviction along with him in every judgment he forms. He knows likewise, that he is more liable to err in some cases than in others. He has a scale in his mind, by which he estimates his liableness to err, and by this he regulates the degree of his assent in his first judgment upon any point.

The author's reasoning supposes, that a man, when he forms his first judgment, conceives himself to be infallible; that by a second and subsequent judgment, he discovers that he is not infallible; and that by a third judgment, subsequent to the second, he estimates his liableness to err in such a case as the present.

If the man proceed in this order, I grant, that his second judgment will, with good reason, bring down the first from supposed infallibility to fallibility; and that his third judgment will, in some degree, either strengthen or weaken the first, as it is corrected by the second.

[But every man of understanding proceeds in a contrary order. When about to judge in any particular point, he knows already that he is not infallible. He knows what are the cases in which he is most or least liable to err. The conviction of these things is always present to his mind, and influences the degree of his assent in his first judgment, as far as to him appears reasonable.]

If he should afterwards find reason to suspect his first judgment, and desires to have all the satisfaction his faculties can give, reason will direct him not to form such a series of estimations upon estimations, as this author requires, but to examine the evidence of his first judgment carefully and coolly; and this

review may very reasonably, according to its result, either strengthen or weaken, or totally overturn his first judgment.

This infinite series of estimations, therefore, is not the method that reason directs in order to form our judgment in any case. It is introduced without necessity, without any use but to puzzle the understanding, and to make us think, that to judge, even in the simplest and plainest cases, is a matter of insurmountable difficulty and endless labour; just as the ancient sceptic, to make a journey of two thousand paces appear endless, divided it into an infinite number of stages.

XI. But we observed, that the estimation which our author requires may admit of another meaning, which indeed is more agreeable to the expression, but inconsistent with what he advanced before.

By *the possibility of error in the estimation of the truth and fidelity* of our faculties, may be meant, that we may err by esteeming our faculties true and faithful, while they may be false and fallacious, even when used according to the rules of reason and logic.

If this be meant, I answer, *first*, That the truth and fidelity of our faculty of judging is, and must be taken for granted in every judgment and in every estimation.

If the sceptic can seriously doubt of the truth and fidelity of his faculty of judging when properly used, and suspend his judgment upon that point till he finds proof, his scepticism admits of no cure by reasoning, and he must even continue in it until he have new faculties given him, which shall have authority to sit in judgment upon the old. Nor is there any need of an endless succession of doubts upon this subject, for the first puts an end to all judgment and reasoning, and to the possibility of conviction by that means. The sceptic has here got possession of a stronghold which is impregnable to reasoning, and we must leave him in possession of it, till nature, by other means, makes him give it up.

Secondly, I observe, that this ground of scepticism, from the supposed infidelity of our faculties, contradicts what the author before advanced in this very argument, to wit, that "the rules of the demonstrative sciences are certain and infallible, and that truth is the natural effect of reason, and that error arises from the irruption of other causes."

But perhaps he made these concessions unwarily. He is therefore at liberty to retract them, and to rest his scepticism upon this sole foundation, That no reasoning can prove the truth and fidelity of our faculties. Here he stands upon firm ground: for it is evident, that every argument offered to prove the truth and fidelity of our faculties, takes for granted the thing in question,

and is therefore that kind of sophism which logicians call *petitio principii.*

XI. *The sincerity of sceptics dubious.*—All we would ask of this kind of sceptic is, that he would be uniform and consistent, and that his practice in life do not belie his profession of scepticism with regard to the fidelity of his faculties: for the want of faith, as well as faith itself, is best shown by works. ☞ If a sceptic avoid the fire as much as those who believe it dangerous to go into it, we can hardly avoid thinking his scepticism to be feigned, and not real.

Our author indeed was aware, that neither his scepticism, nor that of any other person, was able to endure this trial, and therefore enters a caveat against it. "Neither I," says he, "nor any other person, was ever sincerely and constantly of that opinion. Nature, by an absolute and uncontrollable necessity, has determined us to judge, as well as to breathe and feel. My intention, therefore," says he, "in displaying so carefully the arguments of that fantastic sect, is only to make the reader sensible of the truth of my hypothesis, that all our reasonings concerning causes and effects, are derived from nothing but custom, and that belief is more properly an act of the sensitive than of the cogitative part of our nature."

XII. *Ambiguity of the second part of Hume's hypothesis.*—We have before considered the first part of this hypothesis, Whether our reasoning about causes be derived only from custom?

The other part of the author's hypothesis here mentioned is darkly expressed, though the expression seems to be studied, as it is put in italics. It cannot surely mean that belief is not an act of thinking. It is not, therefore, the power of thinking that he calls the cogitative part of our nature. Neither can it be the power of judging, for all belief implies judgment; and to believe a proposition means the same thing as to judge it to be true. ***It seems, therefore, to be the power of reasoning that he calls the cogitative part of our nature.***

If this be the meaning, I agree to it in part. The belief of first principles is not an act of the reasoning power: for all reasoning must be grounded upon them. We judge them to be true, and believe them without reasoning. But why this power of judging of first principles should be called the sensitive part of our nature, I do not understand.

As our belief of first principles is an act of pure judgment without reasoning; so our belief of the conclusions drawn by reasoning from first principles, may, I think, be called an act of the reasoning faculty.

Upon the whole, I see only two conclusions that can be fairly drawn from this profound and intricate reasoning against reason.

The first is, that we are fallible in all our judgments and in all our reasonings. The second, that the truth and fidelity of our faculties can never be proved by reasoning; and therefore our belief of it cannot be founded on reasoning. If the last be what the author calls his hypothesis, I subscribe to it, and think it not an hypothesis, but a manifest truth; though I conceive it to be very improperly expressed, by saying, that belief is more properly an act of the sensitive than of the cogitative part of our nature.

QUESTIONS FOR EXAMINATION.

Hume's arguments in favour of scepticism?

Why, according to this philosopher, should all knowledge be reduced to probability?

In what sense does he use the term "*probability?*"

How do we fall into error in all demonstrative sciences?

ESSAY VIII.

OF TASTE.

CHAPTER I.

OF TASTE IN GENERAL.

I. *Definition of taste.*—That power of the mind by which we are capable of discerning and relishing the beauties of nature, and whatever is excellent in the fine arts, is called *taste.*

The external sense of taste, by which we distinguish and relish the various kinds of food, has given occasion to a metaphorical application of its name to this internal power of the mind, by which we perceive what is beautiful, and what is deformed or defective in the various objects that we contemplate.

Like the taste of the palate, it relishes some things, is disgusted with others; with regard to many, is indifferent or dubious, and is considerably influenced by habit, by associations, and by opinion. These obvious analogies between external and internal taste, have led men, in all ages, and in all or most polished languages, to give the name of the external sense to this power of discerning what is beautiful with pleasure, and what is ugly and faulty in its kind with disgust.

II. [In treating of this as *an intellectual power* of the mind, I intend only to make some observations, first on *its nature,* and then on *its objects.*]

1. In the external sense of taste, we are led by reason and reflection to distinguish between the agreeable sensation we feel, and the quality in the object which occasions it. Both have the same name, and on that account are apt to be confounded by the vulgar, and even by philosophers. The sensation I feel when I taste any sapid body is in my mind; but there is a real quality in the body which is the cause of this sensation. These two things have the same name in language, not from any similitude in their nature, but because the one is the sign of the other, and because there is little occasion in common life to distinguish them.

This was fully explained in treating of the secondary qualities of bodies.* The reason of taking notice of it now is, that the

* Vide Essay II. chap. ix.

internal power of taste bears a great analogy in this respect to the external.

☞ When a beautiful object is before us, we may distinguish the agreeable emotion it produces in us, from the quality of the object which causes that emotion. When I hear an air in music that pleases me, I say, it is fine, it is excellent. This excellence is not in me; it is in the music. But the pleasure it gives is not in the music; it is in me. Perhaps I cannot say what it is in the tune that pleases my ear, as I cannot say what it is in a sapid body that pleases my palate; but there is a quality in the sapid body which pleases my palate, and I call it a delicious taste; and there is a quality in the tune that pleases my taste, and I call it a fine or an excellent air.

III. *The sensation confounded with the quality that occasions it.*—This ought the rather to be observed, because it is become a fashion among modern philosophers, to resolve all our perceptions into mere feelings or sensations in the person that perceives, without any thing corresponding to those feelings in the external object. ☞ According to those philosophers, there is no heat in the fire, no taste in a sapid body; the taste and the heat being only in the person that feels them. In like manner, there is no beauty in any object whatsoever; it is only a sensation or feeling in the person that perceives it.

The language and the common sense of mankind contradict this theory. Even those who hold it, find themselves obliged to use a language that contradicts it. I had occasion to show, that there is no solid foundation for it when applied to the secondary qualities of body; and the same arguments show equally, that it has no solid foundation when applied to the beauty of objects, or to any of those qualities that are perceived by a good taste.

But though some of the qualities that please a good taste resemble the secondary qualities of body, and therefore may be called occult qualities, as we only feel their effect, and have no more knowledge of the cause, but that it is something which is adapted by nature to produce that effect; this is not always the case.

Our judgment of beauty is in many cases more enlightened. A work of art may appear beautiful to the most ignorant, even to a child. It pleases, but he knows not why. To one who understands it perfectly, and perceives how every part is fitted with exact judgment to its end, the beauty is not mysterious; it is perfectly comprehended; and he knows wherein it consists, as well as how it affects him.

IV. *Tastes resolvable into two principal classes, agreeable and disagreeable.*—[2. We may observe, that, though all the tastes we perceive by the palate are either agreeable or disagreeable, or indifferent; yet, among those that are agreeable, there is a great

diversity, not in degree only, but in kind. And as we have not generical names for all the different kinds of taste, we distinguish them by the bodies in which they are found.]

V. *Want of names obstructs our particular notices of the different kinds of beauty, &c.*—In like manner, all the objects of our internal taste are either beautiful, or disagreeable, or indifferent; yet of beauty there is a great diversity, not only of degree, but of kind: the beauty of a demonstration, the beauty of a poem, the beauty of a palace, the beauty of a piece of music, the beauty of a fine woman, and many more that might be named, are different kinds of beauty; and we have *no names to distinguish them* but the names of the different objects to which they belong.

As there is such diversity in the *kinds* of beauty as well as in the *degrees*, we need not think it strange that philosophers have gone into different systems in analysing it, and enumerating its simple ingredients. They have made many just observations on the subject; but, from the love of simplicity, have reduced it to fewer principles than the nature of the thing will permit, having had in their eye some particular kinds of beauty, while they overlooked others.

There are moral beauties as well as natural; beauties in the objects of sense, and in intellectual objects; in the works of men, and in the works of God; in things inanimate, in brute animals, and in rational beings; in the constitution of the body of man, and in the constitution of his mind. There is no real excellence which has not its beauty to a discerning eye, when placed in a proper point of view; and it is as difficult to enumerate the ingredients of beauty as the ingredients of real excellence.

VI. *Use of the sense of taste.*—3. The taste of the palate may be accounted most just and perfect, when we relish the things that are fit for the nourishment of the body, and are disgusted with things of a contrary nature. [The manifest intention of nature in giving us this sense, is, that we may discern what it is fit for us to eat and to drink, and what it is not. Brute animals are directed in the choice of their food merely by their taste.] Led by this guide, they choose the food that nature intended for them, and seldom make mistakes, unless they be pinched by hunger, or deceived by artificial compositions. In infants likewise the taste is commonly sound and uncorrupted, and of the simple productions of nature they relish the things that are most wholesome.

In like manner, our internal taste ought to be accounted most just and perfect, when we are pleased with things that are most excellent in their kind, and displeased with the contrary. The intention of nature is no less evident in this internal taste than in the external. Every excellence has a real beauty and charm that makes it an agreeable object to those who have the faculty of

discerning its beauty; and this faculty is what we call a good taste.

A man, who, by any disorder in his mental powers, or by bad habits, has contracted a relish for what has no real excellence, or what is deformed and defective, has a depraved taste, like one who finds a more agreeable relish in ashes or cinders than in the most wholesome food. As we must acknowledge the taste of the palate to be depraved in this case, there is the same reason to think the taste of the mind depraved in the other.

There is therefore a just and rational taste, and there is a depraved and corrupted taste. For it is too evident, that, by bad education, bad habits, and wrong associations, men may acquire a relish for nastiness, for rudeness, and ill breeding, and for many other deformities. To say that such a taste is not vitiated, is no less absurd than to say, that the sickly girl who delights in eating charcoal and tobacco-pipes, has as just and natural a taste as when she is in perfect health.

VII. [4. *The force of custom*, of fancy, and of casual associations, is very great both upon the external and internal taste. An Esquimaux can regale himself with a draught of whale-oil, and a Canadian can feast upon a dog. A Kamschatkadale lives upon putrid fish, and is sometimes reduced to eat the bark of trees. The taste of rum, or of green tea, is at first as nauseous as that of ipecacuanha, to some persons, who may be brought by use to relish what they once found so disagreeable.]

When we see such varieties in the taste of the palate produced by custom and associations, and some perhaps by constitution, we may be the less surprised that the same causes should produce like varieties in the taste of beauty; that the African should esteem thick lips and a flat nose; that other nations should draw out their ears, till they hang over their shoulders; that in one nation ladies should paint their faces, and in another should make them shine with grease.

VIII. *A standard of taste as real as that of truth.*—5. Those who conceive that there is no standard in nature by which taste may be regulated, and that the common proverb, *That there ought to be no dispute about taste*, is to be taken in the utmost latitude, go upon slender and insufficient ground. The same arguments might be used with equal force against any standard of truth.

Whole nations by the force of prejudice are brought to believe the grossest absurdities; and why should it be thought that the taste is less capable of being perverted than the judgment? It must indeed be acknowledged, that men differ more in the faculty of taste than in what we commonly call judgment; and therefore it may be expected that they should be more liable to have their taste corrupted in matters of beauty and deformity, than their judgment in matters of truth and error.

If we make due allowance for this, we shall see that it is as easy to account for the variety of tastes, though there be in nature a standard of true beauty, and consequently of good taste; as it is to account for the variety and contrariety of opinions, though there be in nature a standard of truth, and consequently of right judgment.

IX. [6. Nay, if we speak accurately and strictly, we shall find, that, *in every operation of taste, there is judgment implied.*]

☞ When a man pronounces a poem or a palace to be beautiful, he affirms something of that poem or that palace; and every affirmation or denial expresses judgment. For we cannot better define judgment, than by saying that it is an affirmation or denial of one thing concerning another. I had occasion to show, when treating of judgment, that it is implied in every perception of our external senses. There is an immediate conviction and belief of the existence of the quality perceived, whether it be colour, or sound, or figure; and the same thing holds in the perception of beauty or deformity.

If it be said that the perception of beauty is merely a feeling in the mind that perceives, without any belief of excellence in the object, the necessary consequence of this opinion is, that when I say Virgil's Georgics is a beautiful poem, I mean not to say any thing of the poem, but only something concerning myself and my feelings. Why should I use a language that expresses the contrary of what I mean?

My language, according to the necessary rules of construction, can bear no other meaning but this, that there is something in the poem, and not in me, which I call beauty. Even those who hold beauty to be merely a feeling in the person that perceives it, find themselves under a necessity of expressing themselves, as if beauty were solely a quality of the object, and not of the percipient.

No reason can be given why all mankind should express themselves thus, but that they believe what they say. It is therefore contrary to the universal sense of mankind, expressed by their language, that beauty is not really in the object, but is merely a feeling in the person who is said to perceive it. Philosophers should be very cautious in opposing the common sense of mankind; for, when they do, they rarely miss going wrong.

Our judgment of beauty is not indeed a dry and unaffecting judgment, like that of a mathematical or metaphysical truth. By the constitution of our nature, it is accompanied with an agreeable feeling or emotion, for which we have no other name but the sense of beauty. This sense of beauty, like the perceptions of our other senses, implies not only a feeling, but an opinion of some quality in the object which occasions that feeling.

In objects that please the taste, we always judge that there is some real excellence, some superiority to those that do not please. In some cases, that superior excellence is distinctly perceived, and can be pointed out; in other cases, we have only a general notion of some excellence which we cannot describe. Beauties of the former kind may be compared to the primary qualities perceived by the external senses; those of the latter kind, to the secondary.

X. *Of reflex or secondary senses.*—7. Beauty or deformity in an object, results from its nature or structure. To perceive the beauty, therefore, we must perceive the nature or structure from which it results. In this the internal sense differs from the external. Our external senses may discover qualities which do not depend upon any antecedent perception. Thus I can hear the sound of a bell, though I never perceived any thing else belonging to it. But it is impossible to perceive the beauty of an object without perceiving the object, or at least conceiving it. [On this account, Dr. Hutcheson called *the senses of beauty and harmony reflex or secondary senses;* because the beauty cannot be perceived unless the object be perceived by some other power of the mind.] Thus the sense of harmony and melody in sounds supposes the external sense of hearing, and is a kind of secondary to it. A man born deaf may be a good judge of beauties of another kind, but can have no notion of melody or harmony. The like may be said of beauties in colouring and in figure, which can never be perceived without the senses by which colour and figure are perceived.

QUESTIONS FOR EXAMINATION.

Taste defined?
How are the sensation and the quality confounded?
Classes of tastes?
Acquaintance with tastes how obstructed by the poverty of language?
What is the use of the sense of taste?
What reality may be ascribed to a standard of taste?
What is meant by reflex or secondary senses?

CHAPTER II.

OF THE OBJECTS OF TASTE, AND FIRST OF NOVELTY.

I. ☞ A PHILOSOPHICAL analysis of the objects of taste is like applying the anatomical knife to a fine face. The design of the philosopher, as well as of the anatomist, is not to gratify taste, but to improve knowledge. The reader ought to be aware of this, that he may not entertain an expectation in which he will be disappointed.

II. *Addison's categories.*—By the objects of taste, I mean those qualities or attributes of things, which are by nature adapted to please a good taste. Mr. Addison, and Dr. Akenside after him, have reduced them to three, to wit, *novelty, grandeur,* and *beauty.* This division is sufficient for all I intend to say upon the subject, and therefore I shall adopt it; observing only, that beauty is often taken in so extensive a sense as to comprehend all the objects of taste; yet all the authors I have met with, who have given a division of the objects of taste, make beauty one species.

I take the reason of this to be, that we have specific names for some of the qualities that please the taste, but not for all; and therefore all those fall under the general name of beauty, for which there is no specific name in the division.

There are, indeed, so many species of beauty, that it would be as difficult to enumerate them perfectly, as to enumerate all the tastes we perceive by the palate. Nor does there appear to me sufficient reason for making, as some very ingenious authors have done, as many different internal senses as there are different species of beauty or deformity.

III. *Difficulty of making a correct division of the external senses.*—The division of our external senses is taken from the organs of perception, and not from the qualities perceived. We have not the same means of dividing the internal; because, though some kinds of beauty belong only to objects of the eye, and others to objects of the ear, *there are many which we cannot refer to any bodily organ;* and therefore I conceive every division that has been made of our internal senses to be in some degree arbitrary. They may be made more or fewer, according as we have distinct names for the various kinds of beauty and deformity; and I suspect the most copious languages have not names for them all.

IV. *Definition of novelty.*—Novelty is not properly a quality of the thing to which we attribute it, far less is it a sensation in the mind to which it is new; it is [*a relation which the thing has to the knowledge of the person.*] What is new to one man, may not be so to another; what is new this moment, may be familiar to the same person some time hence. When an object is first brought to our knowledge, it is new, whether it be agreeable or not.

It is evident, therefore, with regard to novelty, (whatever may be said of other objects of taste,) that it is not merely a sensation in the mind of him to whom the thing is new; it is a *real relation* which the thing has to his knowledge at that time.

But we are so constituted, that what is new to us commonly gives pleasure upon that account, if it be not in itself disagreeable.

It rouses our attention, and occasions an agreeable exertion of our faculties.

V. *The pleasures of novelty accounted for from the principles of the human constitution.*—The pleasure we receive from novelty in objects has so great influence in human life, that it well deserves the attention of philosophers: and several ingenious authors, particularly Dr. Gerard in his "Essay on Taste," have, I think, successfully accounted for it, from the principles of the human constitution.

We can perhaps conceive a being so made, that his happiness consists in a continuance of the same unvaried sensations or feelings, without any active exertion on his part. [Whether this be possible or not, it is evident that man is not such a being; his good consists in the vigorous exertion of his active and intellective powers upon their proper objects; he is made for action and progress, and cannot be happy without it; his enjoyments seem to be given by nature, not so much for their own sake, as to encourage the exercise of his various powers.] That tranquillity of soul in which some place human happiness, is not a dead rest, but a regular progressive motion.

Such is the constitution of man by the appointment of nature. This constitution is perhaps a part of the imperfection of our nature; but it is wisely adapted to our state, which is not intended to be stationary, but progressive. The eye is not satiated with seeing, nor the ear with hearing; something is always wanted. Desire and hope never cease, but remain to spur us on to something yet to be acquired; and, if they could cease, human happiness must end with them. That our desire and hope be properly directed, is our part; that they can never be extinguished, is the work of nature.

It is this that makes human life so busy a scene. Man must be doing something, good or bad, trifling or important; and he must vary the employment of his faculties, or their exercise will become languid, and the pleasure that attends it sicken of course.

The notions of enjoyment, and of activity, considered abstractly, are no doubt very different, and we cannot perceive a necessary connexion between them. But, in our constitution, they are so connected by the wisdom of nature, that they must go hand in hand; and the first must be led and supported by the last.

VI. *Attention cannot remain long fixed on any single object.*—An object at first, perhaps, gave much pleasure while attention was directed to it with vigour. But attention cannot be long confined to one unvaried object, nor can it be carried round in the same narrow circle. Curiosity is a capital principle in the human constitution, and its food must be what is in some respect new. What is said of the Athenians may in some degree be

applied to all mankind, That their time is spent in hearing, or telling, or doing some new thing.

Into this part of the human constitution, I think, we may resolve the pleasure we have from novelty in objects.

☞ Curiosity is commonly strongest in children and in young persons, and accordingly novelty pleases them most. In all ages, in proportion as novelty gratifies curiosity, and occasions a vigorous exertion of any of our mental powers in attending to the new object, in the same proportion it gives pleasure. In advanced life, the indolent and inactive have the strongest passion for news, as a relief from a painful vacuity of thought.

VII. *Real value in novelty, although at first not apparent.*—But the pleasure derived from new objects, in many cases, is not owing solely or chiefly to their being new, but to *some other circumstance that gives them value.* The new fashion in dress, furniture, equipage, and other accommodations of life, gives pleasure, not so much, as I apprehend, because it is new, as because it is a sign of rank, and distinguishes a man from the vulgar.

In some things novelty is due, and the want of it a real imperfection. Thus, if an author adds to the number of books, with which the public is already overloaded, we expect from him something new; and if he says nothing but what has been said before, in as agreeable a manner, we are justly disgusted.

When novelty is altogether separated from the conception of worth and utility, it makes but a slight impression upon a truly correct taste. Every discovery in nature, in the arts, and in the sciences, has a real value, and gives a rational pleasure to a good taste. But things that have nothing to recommend them but novelty, are fit only to entertain children, or those who are distressed from a vacuity of thought. This quality of objects may therefore be compared to the cypher in arithmetic, which adds greatly to the value of significant figures; but, when put by itself, signifies nothing at all.

QUESTIONS FOR EXAMINATION.

Addison's categories?
Whence the impediment to a correct division of the external senses?
Definition of novelty?
How are the pleasures of novelty accounted for?
Impossible to give the attention long to the same object?
What value has novelty?

CHAPTER III.

OF GRANDEUR.

I. *Characteristics of the emotions raised by grandeur.*—THE qualities which please the taste are not more various in themselves than are the emotions and feelings with which they affect our minds.

Things new and uncommon affect us with a pleasing surprise, which rouses and invigorates our attention to the object. But this emotion soon flags, if there is nothing but novelty to give it continuance, and leaves no effect upon the mind.

The emotion raised by grand objects is *awful, solemn,* and *serious.*

Of all objects of contemplation, the Supreme Being is the most grand. His eternity, his immensity, his irresistible power, his infinite knowledge and unerring wisdom, his inflexible justice and rectitude, his supreme government, conducting all the movements of this vast universe to the noblest ends, and in the wisest manner, are objects which fill the utmost capacity of the soul, and reach far beyond its comprehension.

The emotion which this grandest of all objects raises in the human mind, is what we call devotion; a serious recollected temper which inspires magnanimity, and disposes to the most heroic acts of virtue.

The emotion produced by other objects which may be called grand, though in an inferior degree, is, in its nature and in its effects, similar to that of devotion. It disposes to seriousness, elevates the mind above its usual state, to a kind of enthusiasm, and inspires magnanimity, and a contempt of what is mean.

Such, I conceive, is the emotion which the contemplation of grand objects raises in us. We are next to consider what this grandeur in objects is.

II. *Of grandeur in objects.*—To me it seems to be nothing else but *such a degree of excellence, in one kind or another, as merits our admiration.*

There are some attributes of mind which have a real and intrinsic excellence, compared with their contraries, and which, in every degree, are the natural objects of esteem, but, in an uncommon degree are objects of admiration. We put a value upon them because they are intrinsically valuable and excellent.

The spirit of modern philosophy would indeed lead us to think, that the worth and value we put upon things is only a sensation in our minds, and not any thing inherent in the object; and that we might have been so constituted as to put the highest

value upon the things which we now despise, and to despise the qualities which we now highly esteem.

It gives me pleasure to observe, that Dr. Price, in his "Review of the Questions concerning Morals," strenuously opposes this opinion, as well as that which resolves moral right and wrong into a sensation in the mind of the spectator. That judicious author saw the consequences which these opinions draw after them, and has traced them to their source, to wit, the account given by Mr. Locke, and adopted by the generality of modern philosophers, of the origin of all our ideas, which account he shows to be very defective.

III. *Occasion of resolving the estimated worth of things into sensations and feelings.*—[This proneness to resolve every thing into feelings and sensations, is an extreme into which we have been led by *the desire of avoiding an opposite extreme,* as common in the ancient philosophy.]

At first, men are prone by nature and by habit to give all their attention to things external. Their notions of the mind, and its operations, are formed from some analogy they bear to objects of sense; and an external existence is ascribed to things which are only conceptions or feelings of the mind.

IV. *Consequences of this proneness in the Peripatetic system.*—This spirit prevailed much in the philosophy both of Plato and of Aristotle, and produced the mysterious notions of eternal and self-existent ideas, of materia prima, of substantial forms, and others of the like nature.

From the time of Des Cartes, philosophy took a contrary turn. That great man discovered, that many things supposed to have an external existence, were only conceptions or feelings of the mind. This track has been pursued by his successors to such an extreme, as to resolve every thing into sensations, feelings, and ideas in the mind, and to leave nothing external at all.

☞ The Peripatetics thought that heat and cold, which we feel, to be qualities of external objects. The moderns make heat and cold to be sensations only, and allow no real quality of body to be called by that name: and the same judgment they have formed with regard to all secondary qualities.

So far Des Cartes and Mr. Locke went. Their successors being put into this track of converting into feelings things that were believed to have an external existence, found that extension, solidity, figure, and all the primary qualities of body, are sensations or feelings of the mind; and that the material world is a phenomenon only, and has no existence but in our mind.

It was then a very natural progress to conceive, that beauty, harmony, and grandeur, the objects of taste, as well as right and wrong, the objects of the moral faculty, are nothing but feelings of the mind.

Those who are acquainted with the writings of modern philosophers, can easily trace this doctrine of feelings, from Des Cartes down to Mr. Hume, who put the finishing stroke to it, by making truth and error to be feelings of the mind, and belief to be an operation of the sensitive part of our nature.

V. To return to our subject, if we hearken to the dictates of common sense, we must be convinced that *there is real excellence in some things*, whatever our feelings or our constitution be.

It depends no doubt upon our constitution, whether we do, or do not perceive excellence where it really is: but the object has its excellence from its own constitution, and not from ours.

The common judgment of mankind in this matter sufficiently appears in the language of all nations, which uniformly ascribes excellence, grandeur, and beauty to the object, and not to the mind that perceives it. And I believe in this, as in most other things, we shall find the common judgment of mankind and true philosophy not to be at variance.

Is not power in its nature more excellent than weakness; knowledge than ignorance; wisdom than folly; fortitude than pusillanimity?

Is there no intrinsic excellence in self-command, in generosity, in public spirit? Is not friendship a better affection of mind than hatred; a noble emulation, than envy?

☞ Let us suppose, if possible, a being so constituted, as to have a high respect for ignorance, weakness, and folly; to venerate cowardice, malice, and envy, and to hold the contrary qualities in contempt; to have an esteem for lying and falsehood, and to love most those who imposed upon him, and used him worst. Could we believe such a constitution to be any thing else than madness and delirium? It is impossible. We can as easily conceive a constitution, by which one should perceive two and three to make fifteen, or a part to be greater than the whole.

VI. *Real excellence belongs to certain qualities of the mind.*—Every one who attends to the operations of his own mind will find it to be certainly true, as it is the common belief of mankind, that esteem is led by opinion, and that every person draws our esteem, as far only as he appears either to reason or fancy to be amiable and worthy.

[There is therefore a real intrinsic excellence in some qualities of mind, as in *power, knowledge, wisdom, virtue, magnanimity*. These in every degree merit esteem; but in an uncommon degree they merit admiration; and that which merits admiration we call grand.]

In the contemplation of uncommon excellence, the mind feels a noble enthusiasm, which disposes it to the imitation of what it admires.

When we contemplate the character of Cato, his greatness of soul, his superiority to pleasure, to toil, and to danger, his ardent zeal for the liberty of his country; when we see him standing unmoved in misfortunes, the last pillar of the liberty of Rome, and falling nobly in his country's ruin, who would not wish to be Cato rather than Cæsar in all his triumph?

Such a spectacle of a great soul struggling with misfortune, Seneca thought not unworthy of the attention of Jupiter himself. "Ecce spectaculum Deo dignum, ad quod respiciat Jupiter suo operi intentus, vir fortis cum mala fortuna compositus."

VII. *The sublimity of the Scriptures acknowledged by heathens.*—As the Deity is of all objects of thought the most grand, the descriptions given in holy writ of his attributes and works, even when clothed in simple expression, are acknowledged to be sublime. The expression of Moses, "And God said, Let there be light, and there was light," has not escaped the notice of Longinus, a heathen critic, as an example of the sublime.

VIII. *Definition of sublimity.*—What we call sublime in description, or in speech of any kind, is [a proper expression of the admiration and enthusiasm which the subject produces in the mind of the speaker]. If this admiration and enthusiasm appears to be just, it carries the hearer along with it involuntarily, and by a kind of violence rather than by cool conviction: for no passions are so infectious as those which hold of enthusiasm.

But, on the other hand, if the passion of the speaker appears to be in no degree justified by the subject or the occasion, it produces in the judicious hearer no other emotion but ridicule and contempt.

The true sublime cannot be produced solely by art in the composition; it must take its rise from grandeur in the subject, and a corresponding emotion raised in the mind of the speaker. A proper exhibition of these, though it should be artless, is irresistible, like fire thrown into the midst of combustible matter.

When we contemplate the earth, the sea, the planetary system, the universe, these are vast objects; it requires a stretch of imagination to grasp them in our minds. But they appear truly grand, and merit the highest admiration, when we consider them as the work of God, who, in the simple style of Scripture, stretched out the heavens, and laid the foundation of the earth; or, in the poetical language of Milton,

In his hand
He took the golden compasses, prepared,
In God's eternal store, to circumscribe
This universe, and all created things.
One foot he center'd, and the other turn'd
Round thro' the vast profundity obscure;
And said, Thus far extend, thus far thy bounds;
This be thy just circumference, O world.

When we contemplate the world of Epicurus, and conceive the universe to be a fortuitous jumble of atoms, there is nothing grand in this idea. The clashing of atoms by blind chance has nothing in it fit to raise our conceptions, or to elevate the mind. But the regular structure of a vast system of beings, produced by creating power, and governed by the best laws which perfect wisdom and goodness could contrive, is a spectacle which elevates the understanding, and fills the soul with devout admiration.

IX. [*A great work* is a work of great power, great wisdom, and great goodness, well contrived for some important end.] But power, wisdom, and goodness, are properly the attributes of mind only: they are ascribed to the work figuratively, but are really inherent in the author: and, by the same figure, the grandeur is ascribed to the work, but is properly inherent in the mind that made it.

Some figures of speech are so natural and so common in all languages, that we are led to think them literal and proper expressions. Thus an action is called brave, virtuous, generous; but it is evident, that valour, virtue, generosity, are the attributes of persons only, and not of actions. In the action considered abstractly, there is neither valour, nor virtue, nor generosity. The same action done from a different motive may deserve none of those epithets. The change in this case is not in the action, but in the agent; yet, in all languages, generosity and other moral qualities are ascribed to actions. By a figure, we assign to the effect a quality which is inherent only in the cause.

By the same figure, we ascribe to a work that grandeur which properly is inherent in the mind of the author.

When we consider the Iliad as the work of the poet, its sublimity was really in the mind of Homer. He conceived great characters, great actions, and great events, in a manner suitable to their nature, and with those emotions which they are naturally fitted to produce; and he conveys his conceptions and his emotions by the most proper signs. The grandeur of his thoughts is reflected to our eye by his work, and therefore it is justly called a grand work.

When we consider the things presented to our mind in the Iliad, without regard to the poet, the grandeur is properly in Hector and Achilles, and the other great personages, human and divine, brought upon the stage.

X. *Talents and virtues appear to have real excellence.*—Next to the Deity and his works, we admire *great talents* and *heroic virtue* in men, whether represented in history or in fiction. The virtues of Cato, Aristeides, Socrates, Marcus Aurelius, are truly grand. Extraordinary talents and genius, whether in poets, orators, philosophers, or lawgivers, are objects of admiration,

and therefore grand. We find writers of taste seized with a kind of enthusiasm in the description of such personages.

What a grand idea does Virgil give of the power of eloquence, when he compares the tempest of the sea, suddenly calmed by the command of Neptune, to a furious sedition in a great city, quelled at once by a man of authority and eloquence.

"Sic ait, ac dicto citius tumida æquora placat:
Ac veluti magno in populo, si forte coorta est
Seditio, sævitque animis ignobile vulgus;
Jamque faces et saxa volant, furor arma ministrat:
Tum pietate gravem ac meritis, si forte virum quem
Conspexere, silent, arrectisque auribus adstant.
Ille regit dictis animos, et pectora mulcet.
Sic cunctus pelagi cecidit fragor."

"As when in tumults rise th' ignoble crowd,
Mad are their motions, and their tongues are loud;
And stones and brands in rattling vollies fly,
And all the rustic arms that fury can supply:
If then some grave and pious man appear,
They hush their noise, and lend a list'ning ear;
He soothes with sober words their angry mood,
And quenches their innate desire of blood:
So when the father of the flood appears,
And o'er the seas his sov'reign trident rears,
Their fury falls."

The wonderful genius of Sir Isaac Newton, and his sagacity in discovering the laws of nature, is admirably expressed in that short but sublime epitaph by Pope:

"Nature and Nature's laws lay hid in night;
God said, Let Newton be, and all was light."

Hitherto we have found grandeur only in qualities of mind; but it may be asked, Is there no real grandeur in material objects?

It will perhaps appear extravagant to deny that there is; yet it deserves to be considered, whether all the grandeur we ascribe to objects of sense be not derived from something intellectual, of which they are the effects or signs, or to which they bear some relation or analogy.

XI. *Metaphorical use of language ancient.*—Besides the relations of effect and cause, of sign and thing signified, there are innumerable similitudes and analogies between things of very different nature, which lead us to connect them in our imagination, and to ascribe to the one what properly belongs to the other.

[Every metaphor in language is an instance of this; and it must be remembered, that a very *great part of language*, which we now account proper, *was originally metaphorical;* for the metaphorical meaning becomes the proper as soon as it becomes the most usual; much more, when that which was at first the proper meaning falls into disuse.]

XII.—*Two causes have contributed to the extensive use of metaphor.*—[(1) The poverty of language, no doubt, contributes

in part to the use of metaphor; and therefore we find the most barren and uncultivated languages the most metaphorical.] But the most copious language may be called barren, compared with the fertility of human conceptions, and can never, without the use of figures, keep pace with the variety of their delicate modifications.

¶[(2) But another cause of the use of metaphor is, that we find pleasure in discovering relations, similitudes, analogies, and even contrasts that are not obvious to every eye. All figurative speech presents something of this kind; and the *beauty of poetical language* seems to be derived in a great measure from this source.]

Of all figurative language, that is the most common, the most natural, and the most agreeable, which either gives a body, if we may so speak, to things intellectual, and clothes them with visible qualities; or which, on the other hand, gives intellectual qualities to the objects of sense.

To beings of more exalted faculties, intellectual objects may perhaps appear to most advantage in their naked simplicity. But we can hardly conceive them but by means of some analogy they bear to the objects of sense. The names we give them are almost all metaphorical or analogical.

Thus the names of grand and sublime, as well as their opposites, mean and low, are evidently borrowed from the dimensions of body; yet it must be acknowledged, that many things are truly grand and sublime, to which we cannot ascribe the dimensions of height and extension.

Some analogy there is, without doubt, between greatness of dimension, which is an object of external sense, and that grandeur which is an object of taste. On account of this analogy, the last borrows its name from the first; and the name being common, leads us to conceive that there is something common in the nature of the things.

XIII. [But we shall find many qualities of mind, denoted by names taken from some quality of body to which they have some *analogy*, without any thing common in their nature.]

Sweetness and austerity, simplicity and duplicity, rectitude and crookedness, are names common to certain qualities of mind, and to qualities of body to which they have some analogy; yet he would err greatly who ascribed to a body that sweetness or that simplicity which are the qualities of mind. In like manner, greatness and meanness are names common to qualities perceived by the external sense, and to qualities perceived by taste; yet he may be in an error, who ascribes to the objects of sense that greatness or that meanness, which is only an object of taste.

As intellectual objects are made more level to our apprehension by giving them a visible form; so the objects of sense are dignified and made more august, by ascribing to them intellectual qualities which have some analogy to those they really possess.

The sea rages, the sky lours, the meadows smile, the rivulets murmur, the breezes whisper, the soil is grateful or ungrateful; such expressions are so familiar in common language, that they are scarcely accounted poetical or figurative; but they give a kind of dignity to inanimate objects, and make our conception of them more agreeable.

When we consider matter as an inert, extended, divisible and moveable substance, there seems to be nothing in these qualities which we can call grand; and when we ascribe grandeur to any portion of matter, however modified, may it not borrow this quality from something intellectual, of which it is the effect, or sign, or instrument, or to which it bears some analogy; or, perhaps, because it produces in the mind an emotion that has some resemblance to that admiration which truly grand objects raise?

XIV. *Burke misled by the similarity of dread to admiration.*—A very elegant writer on the sublime and beautiful, makes every thing grand or sublime that is terrible. [Might he not be led to this by the similarity between *dread and admiration?* Both are grave and solemn passions; both make a strong impression upon the mind; and both are very infectious.] But they differ specifically, in this respect, that admiration supposes some uncommon excellence in its object, which dread does not. We may admire what we see no reason to dread; and we may dread what we do not admire. In dread, there is nothing of that enthusiasm which naturally accompanies admiration, and is a chief ingredient of the emotion raised by what is truly grand or sublime.

Upon the whole, I humbly apprehend, that true grandeur is such a degree of excellence as is fit to raise an enthusiastical admiration; that this grandeur is found originally and properly in qualities of mind; that it is discerned in objects of sense only by reflection, as the light we perceive in the moon and planets is truly the light of the sun; and that those who look for grandeur in mere matter, seek the living among the dead.

If this be a mistake, it ought at least to be granted, that the grandeur which we perceive in qualities of mind, ought to have a different name from that which belongs properly to the objects of sense, as they are very different in their nature, and produce very different emotions in the mind of the spectator.

QUESTIONS FOR EXAMINATION.

Qualities of the emotion raised by objects of grandeur?

How have we been led into the wish to resolve every thing into feelings and sensations?

In what mental qualities is there a real excellence?

Definition of sublimity?

Talents and virtues more than apparently valuable?

Causes that led to the early use of metaphor?

Oversight of Burke?

CHAPTER IV.

OF BEAUTY.

I. *The kinds of beauty almost as various as the objects to which the term is applied.*—BEAUTY is found in things so various, and so very different in nature, that it is difficult to say wherein it consists, or what there can be common to all the objects in which it is found.

Of the objects of sense, we find beauty in colour, in sound, in form, in motion. There are beauties of speech, and beauties of thought; beauties in the arts, and in the sciences; beauties in actions, in affections, and in characters.

In things so different, and so unlike, is there any quality, the same in all, which we may call by the name of beauty? What can it be that is common to the thought of a mind, and the form of a piece of matter, to an abstract theorem, and a stroke of wit?

I am indeed unable to conceive any quality in all the different things that are called beautiful, that is the same in them all. There seems to be no identity, nor even similarity, between the beauty of a theorem and the beauty of a piece of music, though both may be beautiful. The kinds of beauty seem to be as various as the objects to which it is ascribed.

II. *This variety has a rational origin.*—But why should things so different be called by the same name? This cannot be without a reason. If there be nothing common in the things themselves, they must have some common relation to us, or to something else, which leads us to give them the same name.

All the objects we call beautiful agree in two things, which seem to concur in our sense of beauty. *First,* When they are perceived, or even imagined, they produce a certain agreeable emotion or feeling in the mind; and *secondly,* This agreeable emotion is accompanied with an opinion or belief of their having some perfection or excellence belonging to them.

Whether the pleasure we feel in contemplating beautiful objects may have any necessary connexion with the belief of their excellence, or whether that pleasure be conjoined with this belief, by the good pleasure only of our Maker, I will not determine. The reader may see Dr. Price's sentiments upon this subject, which merit consideration, in the second chapter of his "Review of the Questions concerning Morals."

Though we may be able to conceive these two ingredients of our sense of beauty disjoined, this affords no evidence that they have no necessary connexion. It has indeed been maintained, that whatever we can conceive is possible; but I endeavoured, in treating of conception, to show, that this opinion, though very

common, is a mistake. There may be, and probably are, many necessary connexions of things in nature, which we are too dim-sighted to discover.

The emotion produced by beautiful objects is gay and pleasant. It sweetens and humanizes the temper, is friendly to every benevolent affection, and tends to allay sullen and angry passions. It enlivens the mind, and disposes it to other agreeable emotions, such as those of love, hope, and joy. It gives a value to the object, abstracted from its utility.

In things that may be possessed as property, beauty greatly enhances the price. A beautiful dog or horse, a beautiful coach or house, a beautiful picture or prospect, is valued by its owner and by others, not only for its utility, but for its beauty.

If the beautiful object be a person, his company and conversation are, on that account, the more agreeable, and we are disposed to love and esteem him. Even in a perfect stranger, it is a powerful recommendation, and disposes us to favour and think well of him, if of our own sex, and still more if of the other.

"There is nothing," says Mr. Addison, "that makes its way more directly to the soul than beauty, which immediately diffuses a secret satisfaction and complacence through the imagination, and gives a finishing to any thing that is great and uncommon. The very first discovery of it strikes the mind with an inward joy, and spreads a cheerfulness and delight through all its faculties."

III. *Difference and agreement between liking to a person, and liking to inanimate beings.*—As we ascribe beauty, not only to persons, but to inanimate things, we give the name of love or liking to the emotion, which beauty, in both these kinds of objects, produces. [It is evident, however, that liking to a person is a very different affection of mind from liking to an inanimate thing. The first always implies *benevolence;* but what is inanimate cannot be the object of benevolence. The two affections, however different, have *a resemblance* in some respects; and, on account of that resemblance, have the same name:] and perhaps beauty, in these two different kinds of objects, though it has one name, may be as different in its nature as the emotions which it produces in us.

Besides the agreeable emotion which beautiful objects produce in the mind of the spectator, they produce also an opinion or judgment of some perfection or excellence in the object. This I take to be a second ingredient in our sense of beauty, though it seems not to be admitted by modern philosophers.

The ingenious Dr. Hutcheson, who perceived some of the defects of Mr. Locke's system, and made very important improvements upon it, seems to have been carried away by it, in his notion of beauty. In his "Inquiry concerning Beauty," sect. i., "Let it be observed," says he, "that, in the following papers,

the word beauty is taken for the idea raised in us, and the sense of beauty, for our power of receiving that idea." And, again, "Only let it be observed, that, by absolute or original beauty, is not understood any quality supposed to be in the object which should, of itself, be beautiful, without relation to any mind which perceives it: for beauty, like other names of sensible ideas, properly denotes the perception of some mind; so cold, hot, sweet, bitter, denote the sensations in our minds, to which perhaps there is no resemblance in the objects which excite these ideas in us: however, we generally imagine otherwise. Were there no mind, with a sense of beauty, to contemplate objects, I see not how they could be called beautiful."

There is no doubt an analogy between the external senses of touch and taste, and the internal sense of beauty. This analogy led Dr. Hutcheson, and other modern philosophers, to apply to beauty what Des Cartes and Locke had taught concerning the secondary qualities perceived by the external senses.

IV. [*Mr. Locke's doctrine* concerning the secondary qualities of body, is not so much an error in judgment as *an abuse of words*.] He distinguished very properly, between the sensations we have of heat and cold, and that quality or structure in the body which is adapted by nature to produce those sensations in us. He observed very justly, that there can be no similitude between one of these and the other. They have the relation of an effect to its cause, but no similitude. This was a very just and proper correction of the doctrine of the Peripatetics, who taught, that all our sensations are the very form and image of the quality in the object by which they are produced.

What remained to be determined was, whether the words heat and cold, in common language, signify the sensations we feel, or the qualities of the object which are the cause of these sensations. Mr. Locke made heat and cold to signify only the sensations we feel, and not the qualities which are the cause of them. And in this, I apprehend, lay his mistake. For it is evident, from the use of language, that hot and cold, sweet and bitter, are attributes of external objects, and not of the person who perceives them. Hence, it appears a monstrous paradox to say, there is no heat in the fire, no sweetness in sugar: but, when explained according to Mr. Locke's meaning, it is only, like most other paradoxes, an abuse of words.

V. [*The sense of beauty* may be analyzed in a manner very similar to the *sense of sweetness*. It is an agreeable feeling or emotion, accompanied with an opinion or judgment of some excellence in the object, which is fitted by nature to produce that feeling.]

The feeling is, no doubt, in the mind, and so also is the judgment we form of the object: but this judgment, like all others, must be true or false. If it be a true judgment, there is some

real excellence in the object. And the use of all languages shows, that the name of beauty belongs to this excellence of the object, and not to the feelings of the spectator.

To say that there is in reality no beauty in those objects in which all men perceive beauty, is to attribute to man fallacious senses. But we have no ground to think so disrespectfully of the Author of our being; the faculties he hath given us are not fallacious; nor is that beauty, which he hath so liberally diffused over all the works of his hands, a mere fancy in us, but a real excellence in his works, which express the perfection of their Divine Author.

We have reason to believe, not only that the beauties we see in nature are real, and not fanciful, but that there are thousands which our faculties are too dull to perceive. We see many beauties, both of human and divine art, which the brute animals are incapable of perceiving; and superior beings may excel us as far in their discernment of true beauty, as we excel the brutes.

☞ The man who is skilled *in painting* or *statuary*, sees more of the beauty of a fine picture or statue than a common spectator. The same thing holds in all the fine arts. The most perfect works of art, have a beauty that strikes even the rude and ignorant; but they see only a small part of that beauty which is seen in such works by those who understand them perfectly, and can produce them.

This may be applied with no less justice to the works of nature. They have a beauty that strikes even the ignorant and inattentive. But the more we discover of their structure, of their mutual relations, and of the laws by which they are governed, the greater beauty, and the more delightful marks of art, wisdom and goodness, we discern.

☞ Thus the expert *anatomist* sees numberless beautiful contrivances in the structure of the human body, which are unknown to the ignorant.

☞ Although the vulgar eye sees much beauty in the face of the heavens, and in the various motions and changes of the heavenly bodies, the expert *astronomer*, who knows their order and distances, their periods, the orbits they describe in the vast regions of space, and the simple and beautiful laws by which their motions are governed, and all the appearances of their stations, progressions, and retrogradations, their eclipses, occultations, and transits are produced, sees a beauty, order, and harmony reign through the whole planetary system, which delights the mind. The eclipses of the sun and moon, and the blazing tails of comets, which strike terror into barbarous nations, furnish the most pleasing entertainment to his eye, and a feast to his understanding.

VI. *Many beauties in the works of nature unperceived by the*

ignorant.—In every part of nature's works, there are numberless beauties, which, on account of our ignorance, we are unable to perceive. Superior beings may see more than we; but He only who made them, and, upon a review, pronounced them all to be very good, can see all their beauty.

Our determinations with regard to the beauty of objects, may, I think, be distinguished into two kinds; the first we may call instinctive, the other rational.

Some objects strike us at once, and appear beautiful at first sight, without any reflection, without our being able to say why we call them beautiful, or being able to specify any perfection which justifies our judgment. Something of this kind there seems to be in brute animals, and in children before the use of reason; nor does it end with infancy, but continues through life.

☞ In the plumage of birds, and of butterflies, in the colours and form of flowers, of shells, and of many other objects, we perceive a beauty that delights; but cannot say what it is in the object that should produce that emotion.

The beauty of the object may in such cases be called *an occult quality*. We know well how it affects our senses; but what it is in itself we know not. But this, as well as other occult qualities, is a proper subject of philosophical disquisition; and, by a careful examination of the objects to which nature hath given this amiable quality, we may perhaps discover some real excellence in the object, or at least, some valuable purpose that is served by the effect which it produces upon us.

This instinctive sense of beauty, in different species of animals, may differ as much as the external sense of taste, and in each species be adapted to its manner of life. By this perhaps the various tribes are led to associate with their kind, to dwell among certain objects rather than others, and to construct their habitation in a particular manner.

There seem likewise to be varieties in the sense of beauty in the individuals of the same species, by which they are directed in the choice of a mate, and in the love and care of their offspring.

"We see," says Mr. Addison, "that every different species of sensible creatures has its different notions of beauty, and that each of them is most affected with the beauties of its own kind. This is no where more remarkable than in birds of the same shape and proportion, where we often see the mate determined in his courtship by the single grain or tincture of a feather, and never discovering any charms but in the colour of its own species."

"Scit thalamo servare fidem, sanctasque veretur
Connubii leges; non illum in pectore candor
Sollicitat niveus; neque pravum accendit amorem
Splendida lanugo, vel honesta in vertice crista;
Purpureusve nitor pennarum; ast agmina latè

Fœminea explorat cautus, maculasque requirit
Cognatas, paribusque interlita corpora guttis:
Ni faceret, pictis sylvam circum undique monstris
Confusam aspiceres vulgo, partusque biformes,
Et genus ambiguum, et veneris monumenta nefandæ.
Hinc merula in nigro se oblectat nigra marito;
Hinc socium lasciva petit philomela canorum,
Agnoscitque pares sonitus; hinc noctua tetram
Canitiem alarum, et glaucos miratur ocellos.
Nempe sibi semper constat, crescitque quotannis
Lucida progenies, castos confessa parentes:
Vere novo exultat, plumasque decora juventus
Explicat ad solem, patriisque coloribus ardet."

He wedlock's laws knows strictly to observe,
From these no painted plumage makes him swerve;
In vain invited by the snowy breast,
The wings bright glancing, or the splendid crest,
Heedless of all he searches through the grove,
To court the favours of a cognate love.
Were less his care, the woods, the lawns would teem
With creatures monstrous as a fever's dream;
The blackbird thus, with love's gay hopes elate,
Unerring seeks and claims his sable mate;
The nightingale delighted pours his throat,
And woos his consort with a kindred note;
The owl admires the form, the stare, the cries,
Which scatter terror as his female flies.
Broods pass away by other broods replaced,
In whom the parents' forms and notes are traced;
The feather'd youth in springtide's bloom rejoice,
And praise boon Nature with a grateful voice.

In the human kind there are varieties in the taste of beauty, of which we can no more assign a reason than of the variety of their features, though it is easy to perceive that very important ends are answered by both. These varieties are most observable in the judgments we form of the features of the other sex; and in this the intention of nature is most apparent.

VII. *How far our determinations of beauty may be deemed rational.*—As far as our determinations of the comparative beauty of objects are *instinctive*, they are no subject of reasoning or of criticism; they are purely the gift of nature, and we have no standard by which they may be measured.

[But there are judgments of beauty that may be called *rational*, being grounded on some agreeable quality of the object which is distinctly conceived, and may be specified.]

This distinction between a rational judgment of beauty and that which is instinctive, may be illustrated by an instance.

☞ In a *heap of pebbles*, one that is remarkable for brilliancy of colour and regularity of figure, will be picked out of the heap by a child. He perceives a beauty in it, puts a value upon it, and is fond of the property of it. For this preference, no reason can be given, but that children are, by their constitution, fond of brilliant colours, and of regular figures.

☞ Suppose, again, that an expert *mechanic* views a well constructed machine. He sees all its parts to be made of the fittest materials, and of the most proper form; nothing superfluous, nothing deficient; every part adapted to its use, and the whole fitted in the most perfect manner to the end for which it is intended. He pronounces it to be a beautiful machine. He views it with the same agreeable emotion as the child viewed the pebble; but he can give a reason for his judgment, and point out the particular perfections of the object on which it is grounded.

Although the instinctive and the rational sense of beauty may be perfectly distinguished in speculation, yet, in passing judgment upon particular objects, they are often so mixed and confounded, that it is difficult to assign to each its own province. Nay, it may often happen, that a judgment of the beauty of an object, which was at first merely instinctive, shall afterwards become rational, when we discover some latent perfection of which that beauty in the object is a sign.

VIII. *Of original and derivative beauty.*—[As the sense of beauty may be distinguished into instinctive and rational; so, I think, beauty itself may be distinguished into *original and derived.*]

As some objects shine by their own light, and many more by light that is borrowed and reflected; so, I conceive, the lustre of beauty in some objects is inherent and original, and in many others is borrowed and reflected.

There is nothing more common in the sentiments of all mankind, and in the language of all nations, than what may be called a communication of attributes; that is, transferring an attribute, from the subject to which it properly belongs, to some related or resembling subject.

The various objects which nature presents to our view, even those that are most different in kind, have innumerable similitudes, relations, and analogies, which we contemplate with pleasure, and which lead us naturally to borrow words and attributes from one object to express what belongs to another. The greatest part of every language under heaven, is made up of words borrowed from one thing, and applied to something supposed to have some relation or analogy to their first signification.

The attributes of body we ascribe to mind, and the attributes of mind to material objects. To inanimate things we ascribe life, and even intellectual and moral qualities. And although the qualities that are thus made common belong to one of the subjects in the proper sense, and to the other metaphorically, these different senses are often so mixed in our imagination, as to produce the same sentiment with regard to both.

It is therefore natural, and agreeable to the strain of human

sentiments and of human language, that in many cases the beauty which originally and properly is in the thing signified, should be transferred to the sign; that which is in the cause, to the effect; that which is in the end, to the means; and that which is in the agent, to the instrument.

IX. *Analogy between the distinctions of grandeur and those of beauty.*—[If what was said in the last chapter of the distinction between the *grandeur* which we ascribe (1) to qualities of mind, and that which we ascribe (2) to material objects, be well founded, this distinction of the beauty of objects will easily be admitted as perfectly analogous to it. I shall therefore only illustrate it by an example.]

☞ There is nothing in the exterior of a man more lovely and more attractive than perfect good breeding. But what is this good breeding? It consists of all the external signs of due respect to our superiors, condescension to our inferiors, politeness to all with whom we converse or have to do, joined in the fair sex with that delicacy of outward behaviour which becomes them. And how comes it to have such charms in the eyes of all mankind? For this reason only, as I apprehend, that it is a natural sign of that temper, and those affections and sentiments with regard to others, and with regard to ourselves, which are in themselves truly amiable and beautiful.

This is the original, of which good breeding is the picture; and it is the beauty of the original that is reflected to our sense by the picture. The beauty of good breeding, therefore, is not originally in the external behaviour in which it consists, but is derived from the qualities of mind which it expresses. And though there may be good breeding without the amiable qualities of mind, its beauty is still derived from what it naturally expresses.

X. *Of the qualities in objects generally to which beauty of either kind may be ascribed.*—[Having explained these distinctions of our *sense* of beauty into *instinctive and rational,* and of beauty itself into *original and derived,* I would now proceed to give a general view of those qualities in objects, to which we may justly and rationally ascribe beauty, whether original or derived.]

But here some embarrassment arises from the vague meaning of the word beauty, which I had occasion before to observe.

Sometimes it is extended, so as to include every thing that pleases a good taste, and so comprehends grandeur and novelty, as well as what in a more restricted sense is called beauty. At other times, it is even by good writers confined to the objects of sight, when they are either seen, or remembered, or imagined. Yet it is admitted by all men, that there are beauties in music; that there is beauty as well as sublimity in composition, both in verse and in prose; that there is beauty in characters, in affec-

tions, and in actions. These are not objects of sight; and a man may be a good judge of beauty of various kinds, who has not the faculty of sight.

To give a determinate meaning to a word so variously extended and restricted, I know no better way than what is suggested by the common division of the objects of taste into *novelty*, *grandeur*, and *beauty*.* Novelty, it is plain, is no quality of the new object, but merely a relation which it has to the knowledge of the person to whom it is new. Therefore, if this general division be just, every quality in an object that pleases a good taste, must, in one degree or another, have either grandeur or beauty. It may still be difficult to fix the precise limit betwixt grandeur and beauty; but they must together comprehend every thing fitted by its nature to please a good taste, that is, every real perfection and excellence in the objects we contemplate.

In a poem, in a picture, in a piece of music, it is real excellence that pleases a good taste. In a person, every perfection of the mind, moral or intellectual, and every perfection of the body, gives pleasure to the spectator as well as to the owner, when there is no envy nor malignity to destroy that pleasure.

It is therefore in the scale of perfection and real excellence that we must look for what is either grand or beautiful in objects. What is the proper object of admiration is grand, and what is the proper object of love and esteem is beautiful.

This, I think, is the only notion of beauty that corresponds with the division of the objects of taste which has been generally received by philosophers. And this connexion of beauty with real perfection, was a capital doctrine of the Socratic school. It is often ascribed to Socrates in the dialogues of Plato and of Xenophon.

XI. We may therefore take a view, first, of those qualities of mind to which we may justly and rationally ascribe beauty, and then of the beauty we perceive in the objects of sense. [We shall find, if I mistake not, that, in the first, *original* beauty is to be found, and that the beauties of the second class are derived from some *relation* they bear to mind, as the signs or expressions of some amiable mental quality, or as the effects of design, art, and wise contrivance.]

[As grandeur naturally produces admiration, beauty naturally produces love. We may therefore justly ascribe beauty to those qualities which are the natural objects of love and kind affection.]

XII. *Certain moral virtues obviously possess intrinsic worth.*—Of this kind chiefly are some of the moral virtues, which in a peculiar manner constitute a lovely character. Innocence, gentleness, condescension, humanity, natural affection, public spirit, and the whole train of the soft and gentle virtues. [These qua-

* Addison's Categories, p. 506.

lities are amiable from their very nature, and on account of their intrinsic worth.]

There are other virtues that raise *admiration*, and are therefore grand; such as magnanimity, fortitude, self-command, superiority to pain and labour, superiority to pleasure, and to the smiles of fortune as well as to her frowns.

These awful virtues constitute what is most grand in the human character; the gentle virtues, what is most beautiful and lovely. As they are virtues, they draw the approbation of our moral faculty; as they are becoming and amiable, they affect our sense of beauty.

Next to the amiable moral virtues, there are many intellectual talents which have an intrinsic value, and draw our love and esteem to those who possess them. Such are, knowledge, good sense, wit, humour, cheerfulness, good taste, excellence in any of the fine arts, in eloquence, in dramatic action; and we may add, excellence in every art of peace or war that is useful in society.

There are likewise talents which we refer to the body, which have an original beauty and comeliness; such as health, strength, and agility, the usual attendants of youth; skill in bodily exercises, and skill in the mechanic arts. These are real perfections of the man, as they increase his power, and render the body a fit instrument for the mind.

XIII. *Original fountain of beauty.*—[I apprehend, therefore, that it is in the moral and intellectual perfections of mind, and in its active powers, that beauty originally dwells; and that from this as the *fountain*, all the beauty which we perceive in the visible world is derived.]

This, I think, was the opinion of the ancient philosophers before named; and it has been adopted by Lord Shaftesbury and Dr. Akenside among the moderns.

> "Mind, mind alone! bear witness earth and heav'n,
> The living fountains in itself contains
> Of beauteous and sublime. Here hand in hand
> Sit paramount the graces. Here enthroned,
> Celestial Venus, with divinest airs,
> Invites the soul to never-fading joy."—AKENSIDE.

But neither mind, nor any of its qualities or powers, is an immediate object of perception to man. We are, indeed, immediately *conscious* of the operations of our own mind; and every degree of perfection in them gives the purest pleasure, with a proportional degree of self-esteem, so flattering to self-love, that the great difficulty is to keep it within just bounds, so that we may not think of ourselves above what we ought to think.

Other minds we perceive only through the medium of material objects, on which their signatures are impressed. It is through

this medium that we perceive life, activity, wisdom, and every moral and intellectual quality in other beings. The signs of those qualities are immediately perceived by the senses; by them the qualities themselves are reflected to our understanding; and we are very apt to attribute to the sign the beauty or the grandeur, which is properly and originally in the things signified.

XIV. The invisible Creator, the Fountain of all perfection, hath stamped upon all his works signatures of his divine wisdom, power, and benignity, which are visible to all men. The works of men in science, in the arts of taste, and in the mechanical arts, bear the signatures of those qualities of mind which were employed in their production. *Their external behaviour* and *conduct in life* expresses the good or bad qualities of their mind.

In every species of animals, we perceive by visible signs their instincts, their appetites, their affections, their sagacity. Even in the inanimate world there are many things analogous to the qualities of mind; so that there is hardly any thing belonging to mind which may not be represented by images taken from the objects of sense; and, on the other hand, every object of sense is beautified, by borrowing attire from the attributes of mind.

Thus the beauties of mind, though invisible in themselves, are perceived in the objects of sense, on which their image is impressed.

If we consider, on the other hand, the qualities in sensible objects to which we ascribe beauty, I apprehend we shall find in all of them some relation to mind, and the greatest in those that are most beautiful.

When we consider inanimate matter abstractly, as a substance endowed with the qualities of extension, solidity, divisibility, and mobility, there seems to be nothing in these qualities that affects our sense of beauty. But when we contemplate the globe which we inhabit, as fitted by its form, by its motions, and by its furniture, for the habitation and support of an infinity of various orders of living creatures, from the lowest reptile up to man, we have a glorious spectacle indeed! with which the grandest and the most beautiful structures of human art can bear no comparison.

XV. *The only perfection of dead matter* is its being, by its various forms and qualities, so admirably fitted for the purposes of animal life, and chiefly that of man. *It furnishes the materials of every art that tends to the support or the embellishment of human life.* By the Supreme Artist, it is organized in the various tribes of the vegetable kingdom, and endowed with a kind of life; a work which human art cannot imitate, nor human understanding comprehend.

In the bodies and various organs of the animal tribes, there is

a composition of matter still more wonderful and more mysterious, though we see it to be admirably adapted to the purposes and manner of life of every species. But in every form, unorganized, vegetable, or animal, it derives its beauty from the purposes to which it is subservient, or from the signs of wisdom, or of other mental qualities which it exhibits.

The qualities of inanimate matter, in which we perceive beauty, are, sound, colour, form, and motion; the first an object of hearing, the other three of sight; which we may consider in order.

XVI. *The beauty of a sound both the sign and the effect of its perfections.*—In a single note, sounded by a very fine voice, there is a beauty which we do not perceive in the same note, sounded by a bad voice, or an imperfect instrument. I need not attempt to enumerate the perfections in a single note, which give beauty to it. Some of them have names in the science of music, and there perhaps are others which have no names. But I think it will be allowed, that every quality which gives beauty to a single note, is a sign of some perfection, either in the organ, whether it be the human voice or an instrument, or in the execution. The beauty of the sound is both the sign and the effect of this perfection; and the perfection of the cause is the only reason we can assign for the beauty of the effect.

In a composition of sounds, or a piece of music, the beauty is either in the harmony, the melody, or the expression. The beauty of expression must be derived, either from the beauty of the thing expressed, or from the art and skill employed in expressing it properly.

In harmony, the very names of concord and discord are metaphorical, and suppose some analogy between the relations of sound, to which they are figuratively applied, and the relations of minds and affections, which they originally and properly signify.

As far as I can judge by my ear, when two or more persons of a good voice and ear, converse together in amity and friendship, the tones of their different voices are concordant, but become discordant when they give vent to angry passions; so that, without hearing what is said, one may know by the tones of the different voices, whether they quarrel or converse amicably. This, indeed, is not so easily perceived in those who have been taught, by good-breeding, to suppress angry tones of voice, even when they are angry, as in the lowest rank, who express their angry passions without any restraint.

When discord arises occasionally in conversation, but soon terminates in perfect amity, we receive more pleasure than from perfect unanimity. In like manner, in the harmony of music, discordant sounds are occasionally introduced, but it is always in order to give a relish to the most perfect concord that follows.

XVII. *Three uses of these analogies between music and mind as to harmony.*—Whether these analogies, between the harmony of a piece of music, and harmony in the intercourse of minds, be merely fanciful, or have any real foundation in fact, I submit to those who have a nicer ear, and have applied it to observations of this kind. [If they have any just foundation, as they seem to me to have, *they serve* (1) *to account for the metaphorical application* of the names of concord and discord to the relations of sounds; (2) to account for the pleasure we have from harmony in music; and (3) to show that the beauty of harmony is derived from the relation it has to agreeable affections of mind.]

With regard to melody, I leave it to the adepts in the science of music, to determine whether music, composed according to the established rules of harmony and melody, can be altogether void of expression; and whether music that has no expression can have any beauty. To me it seems, that every strain in melody that is agreeable, is an imitation of the tones of the human voice in the expression of some sentiment or passion, or an imitation of some other object in nature; and that music, as well as poetry, is an imitative art.

The sense of beauty in the colours, and in the motions of inanimate objects, is, I believe, in some cases instinctive. We see, that children and savages are pleased with brilliant colours and sprightly motions. In persons of an improved and rational taste, there are many sources from which colours and motions may derive their beauty. They, as well as the forms of objects, admit of regularity and variety. The motions produced by machinery, indicate the perfection or imperfection of the mechanism, and may be better or worse adapted to their end, and from that derive their beauty or deformity.

The colours of natural objects are commonly signs of some good or bad quality in the object; or they may suggest to the imagination something agreeable or disagreeable.

In dress and furniture, fashion has a considerable influence on the preference we give to one colour above another.

☞ A number of clouds of different and ever-changing hue, seen on the ground of a serene azure sky at the going down of the sun, present to the eye of every man a glorious spectacle. It is hard to say, whether we should call it grand or beautiful. It is both in a high degree. Clouds towering above clouds, variously tinged, according as they approach nearer to the direct rays of the sun, enlarge our conceptions of the regions above us. They give us a view of the furniture of those regions, which, in an unclouded air, seem to be a perfect void; but are now seen to contain the stores of wind and rain, bound up for the present, but to be poured down upon the earth in due season. Even the simple rustic does not look upon this beautiful sky,

merely as a show to please the eye, but as a happy omen of fine weather to come.

The proper arrangement of colour, and of light and shade, is one of the chief beauties of painting; but this beauty is greatest, when that arrangement gives the most distinct, the most natural, and the most agreeable image of that which the painter intended to represent.

XVIII. [If we consider, in the last place, *the beauty of form or figure in inanimate objects*, this, according to Dr. Hutcheson, *results from regularity, mixed with variety.*] Here it ought to be observed, that regularity, in all cases, expresses design and art: for nothing regular was ever the work of chance: and where regularity is joined with variety, it expresses design more strongly. Besides, it has been justly observed, that regular figures are more easily and more perfectly comprehended by the mind than the irregular, of which we can never form an adequate conception.

Although straight lines and plain surfaces have a beauty from their regularity, they admit of no variety, and therefore are beauties of the lowest order. Curve lines and surfaces admit of infinite variety, joined with every degree of regularity; and therefore in many cases excel in beauty those that are straight.

But the beauty arising from regularity and variety, must always yield to that which arises from the fitness of the form for the end intended. In every thing made for an end the form must be adapted to that end; and every thing in the form that suits the end, is a beauty; every thing that unfits it for its end, is a deformity.

☞ The forms of a pillar, of a sword, and of a balance, are very different. Each may have great beauty; but that beauty is derived from the fitness of the form and of the matter for the purpose intended.

Were we to consider the form of the earth itself, and the various furniture it contains, of the inanimate kind; its distribution into land and sea, mountains and valleys, rivers and springs of water, the variety of soils that cover its surface, and of mineral and metallic substances laid up within it, the air that surrounds it, the vicissitudes of day and night, and of the seasons; the beauty of all these, which indeed is superlative, consists in this, that they bear the most lively and striking impression of the wisdom and goodness of their Author, in contriving them so admirably for the use of man, and of their other inhabitants.

The beauties of the vegetable kingdom are far superior to those of inanimate matter, in any form which human art can give it. Hence, in all ages, men have been fond to adorn their persons and their habitations with the vegetable productions of nature.

The beauties of the field, of the forest, and of the flower-garden, strike a child long before he can reason. He is delighted with what he sees; but he knows not why. This is instinct, but it is not confined to childhood; it continues through all the stages of life. It leads the florist, the botanist, the philosopher, to examine and compare the objects which nature, by this powerful instinct, recommends to his attention. By degrees, he becomes a critic in beauties of this kind, and can give a reason why he prefers one to another. In every species, he sees the greatest beauty in the plants or flowers that are most perfect in their kind, which have neither suffered from unkindly soil, nor inclement weather; which have not been robbed of their nourishment by other plants, nor hurt by any accident. When he examines the internal structure of those productions of nature, and traces them from their embryo state in the seed to their maturity, he sees a thousand beautiful contrivances of nature, which feast his understanding more than their external form delighted his eye.

Thus every beauty in the *vegetable creation*, of which he has formed any rational judgment, expresses some perfection in the object, or some wise contrivance in its author.

In the *animal kingdom*, we perceive still greater beauties than in the vegetable. Here we observe life, and sense, and activity, various instincts and affections, and in many cases, great sagacity. These are attributes of mind, and have an original beauty.

As we allow to brute animals a thinking principle or mind, though far inferior to that which is in man; and as in many of their intellectual and active powers, they very much resemble the human species, their actions, their motions, and even their looks, derive a beauty from the powers of thought which they express.

There is a wonderful variety in their manner of life; and we find the powers they possess, their outward form, and their inward structure, exactly adapted to it. In every species, the more perfectly any individual is fitted for its end and manner of life, the greater is its beauty.

☞ In a race-horse, every thing that expresses agility, ardour, and emulation, gives beauty to the animal. In a pointer, acuteness of scent, eagerness on the game, and tractableness, are the beauties of the species. A sheep derives its beauty from the fineness and quantity of its fleece; and in the wild animals, every beauty is a sign of their perfection in their kind.

XIX. *Analogy between the vegetable and the animal kingdoms.*—It is an observation of the celebrated Linnæus, that in the vegetable kingdom, the poisonous plants have commonly a lurid and disagreeable appearance to the eye, of which he gives many instances. I apprehend *the observation may be extended*

to the animal kingdom, in which we commonly see something shocking to the eye in the noxious and poisonous animals.

The beauties which anatomists and physiologists describe in the internal structure of the various tribes of animals; in the organs of sense, of nutrition, and of motion, are expressive of wise design and contrivance, in fitting them for the various kinds of life for which they are intended.

Thus, I think, it appears, that the beauty which we perceive in the inferior animals, is expressive, either of such perfections as their several natures may receive, or expressive of wise design in him who made them, and that their beauty is derived from the perfections which it expresses.

But of all the objects of sense, the most striking and attractive beauty is perceived in the human species, and particularly in the fair sex.

Milton represents Satan himself, in surveying the furniture of this globe, as struck with the beauty of the first happy pair.

> Two of far nobler shape, erect and tall,
> Godlike erect! with native honour clad
> In naked majesty, seem'd lords of all.
> And worthy seem'd, for in their looks divine,
> The image of their glorious Maker, shone
> Truth, wisdom, sanctitude severe, and pure;
> Severe, but in true filial freedom placed,
> Whence true authority in man; though both
> Not equal, as their sex not equal seem'd,
> For contemplation he, and valour form'd,
> For softness she, and sweet attractive grace.

In this well known passage of Milton, we see that this great poet derives the beauty of the first pair in paradise from those *expressions of moral and intellectual qualities which appeared in their outward form and demeanour.*

The most minute and systematical account of beauty in the human species, and particularly in the fair sex, I have met with, is in "Crito; or, a Dialogue on Beauty," said to be written by the author of "Polymetis," and republished by Dodsley in his collection of fugitive pieces.

XX. *Spence's account of the beauty of the human body.*—I shall borrow from that author some observations, which, I think, tend to show that the beauty of the human body is derived from the signs it exhibits of some perfection of the mind or person.

[All that can be called beauty in the human species may be reduced to these four heads: *colour, form, expression, and grace.* The two former may be called the *body*, the two latter the *soul* of beauty.]

(1) The beauty of *colour* is not owing solely to the natural liveliness of flesh-colour and red, nor to the much greater charms

they receive from being properly blended together; but is also owing, in some degree, to the idea they carry with them of good health, without which, all beauty grows languid and less engaging, and with which it always recovers an additional strength and lustre. This is supported by the authority of Cicero. "Venustas et pulchritudo corporis secerni non potest a valetudine."

Here I observe, that as the colour of the body is very different in different climates, every nation preferring the colour of its climate; and as among us one man prefers a fair beauty, another a brunette, without being able to give any reason for this preference; this diversity of taste has no standard in the common principles of human nature, but must arise from something that is different in different nations, and in different individuals of the same nation.

I observed before, that fashion, habit, associations, and perhaps some peculiarity of constitution, may have great influence upon this internal sense, as well as upon the external. Setting aside the judgments arising from such causes, there seems to remain nothing, that, according to the common judgment of mankind, can be called beauty in the colour of the species, but what expresses perfect health and liveliness, and in the fair sex softness and delicacy; and nothing that can be called deformity but what indicates disease and decline. And if this be so, it follows, that the beauty of colour is derived from the perfections which it expresses. This, however, of all the ingredients of beauty, is the least.

(2) The next in order is form, or proportion of parts. The most beautiful form, as the author thinks, is that which indicates delicacy and softness in the fair sex, and in the male either strength or agility. The beauty of form, therefore, lies all in expression.

(3) The third ingredient, which has more power than either colour or form, he calls *expression*, and observes, that it is only the expression of the tender and kind passions that gives beauty; that all the cruel and unkind ones add to deformity; and that, on this account, good nature may very justly be said to be the best feature, even in the finest face. Modesty, sensibility, and sweetness, blended together, so as either to enliven or to correct each other, give almost as much attraction as the passions are capable of adding to a very pretty face.

It is owing, says the author, to the great force of pleasingness which attends all the kinder passions, that lovers not only seem, but really are, more beautiful to each other than they are to the rest of the world; because, when they are together, the most pleasing passions are more frequently exerted in each of their

faces than they are in either before the rest of the world. There is then, as a French author very well expresses it, a soul upon their countenances, which does not appear when they are absent from one another, or even in company that lays a restraint upon their features.

There is a great difference in the same face, according as the person is in a better or a worse humour, or more or less lively. The best complexion, the finest features, and the exactest shape, without any thing of the mind expressed in the face, is insipid and unmoving. The finest eyes in the world, with an excess of malice or rage in them, will grow shocking. The passions can give beauty without the assistance of colour or form, and take it away where these have united most strongly to give it; and therefore this part of beauty is greatly superior to the other two.

(4) The last and noblest part of beauty is *grace*, which the author thinks undefinable.

Nothing causes love so generally and irresistibly as grace. Therefore, in the mythology of the Greeks and Romans, the Graces were the constant attendants of Venus, the goddess of love. Grace is like the cestus of the same goddess, which was supposed to comprehend every thing that was winning and engaging, and to create love by a secret and inexplicable force, like that of some magical charm.

There are two kinds of grace, the *majestic* and the *familiar;* the first more commanding, the last more delightful and engaging. The Grecian painters and sculptors used to express the former most strongly in the looks and attitudes of their Minervas, and the latter in those of Venus. This distinction is marked in the description of the personages of Virtue and Pleasure in the ancient fable of the Choice of Hercules.

> Graceful, but each with different grace they move,
> This striking sacred awe, that softer winning love.

In the persons of Adam and Eve in paradise, Milton has made the same distinction.

> For contemplation he, and valour form'd,
> For softness she, and sweet attractive grace.

XXI. *Two attributes inseparable from grace.*—Though grace be so difficult to be defined, there are two things that hold universally with relation to it. *First,* There is *no grace without motion;* some genteel or pleasing motion, either of the whole body or of some limb, or at least some feature. Hence, in the face, grace appears only on those features that are moveable, and change with the various emotions and sentiments of the mind, such as the eyes and eye-brows, the mouth and parts adjacent. When Venus appeared to her son Æneas in disguise, and, after some conversation with him, retired, it was by the grace of

her motion in retiring that he discovered her to be truly a goddess.

> Dixit, et avertens roseâ cervice refulsit,
> Ambrosiæque comæ divinum vertice odorem
> Spiravère; pedes vestis defluxit ad imos;
> Et vera incessu patuit dea. Ille, ubi matrem
> Agnovit, etc.

> "Thus having said, she turn'd, and made appear
> Her neck refulgent and dishevell'd hair;
> Which, flowing from her shoulders, reach'd the ground,
> And widely spread ambrosial scents around:
> In length of train descends her sweeping gown,
> And by her graceful walk the queen of love is known."

A *second* observation is, That there can be *no grace with impropriety*, or that nothing can be graceful that is not adapted to the character and situation of the person.

From these observations, which appear to me to be just, we may, I think, conclude, that grace, as far as it is visible, consists of those motions, either of the whole body, or of a part or feature, which express the most perfect propriety of conduct and sentiment in an amiable character.

Those motions must be different in different characters; they must vary with every variation of emotion and sentiment; they may express either dignity or respect, confidence or reserve, love or just resentment, esteem or indignation, zeal or indifference. Every passion, sentiment, or emotion, that in its nature and degree is just and proper, and corresponds perfectly with the character of the person, and with the occasion, is what we may call the soul of grace. The body or visible part consists of those motions and features which give the true and unaffected expression of this soul.

Thus, I think, all the ingredients of human beauty, as they are enumerated and described by this ingenious author, terminate in expression: they either express some perfection of the body as a part of the man, and an instrument of the mind, or some amiable quality or attribute of the mind itself.

It cannot indeed be denied, that the expression of a fine countenance may be unnaturally disjoined from the amiable qualities which it naturally expresses: but we presume the contrary, till we have clear evidence; and even then, we pay homage to the expression, as we do to the throne when it happens to be unworthily filled.

XXII.—Whether what I have offered, to show that all the beauty of the objects of sense is borrowed, and derived from the beauties of mind which it expresses or suggests to the imagination, be well founded or not; I hope this *terrestrial* Venus will not be deemed less worthy of the homage which has always been

paid to her, by being conceived more nearly allied to the *celestial*, than she has commonly been represented.

XXIII. *Summary.*—To make an end of this subject, taste seems to be progressive as man is. *Children*, when refreshed by sleep, and at ease from pain and hunger, are disposed to attend to the objects about them; they are pleased with brilliant colours, gaudy ornaments, regular forms, cheerful countenances, noisy mirth, and glee. Such is the taste of childhood, which we must conclude to be given for wise purposes. A great part of the happiness of that period of life is derived from it; and therefore it ought to be indulged. It leads them to attend to objects which they may afterwards find worthy of their attention. It puts them upon exerting their infant faculties of body and mind, which, by such exertions, are daily strengthened and improved.

As they *advance in years* and in understanding, other beauties attract their attention, which, by their novelty or superiority, throw a shade upon those they formerly admired. They delight in feats of agility, strength, and art; they love those that excel in them, and strive to equal them. In the tales and fables they hear, they begin to discern beauties of mind. Some characters and actions appear lovely, others give disgust. The intellectual and moral powers begin to open, and, if cherished by favourable circumstances, advance gradually in strength, till they arrive at that degree of perfection, to which human nature, in its present state, is limited.

In our progress from infancy to *maturity*, our faculties open in a regular order appointed by nature; the meanest first; those of more dignity in succession, until the moral and rational powers finish the man. Every faculty furnishes new notions, brings new beauties into view, and enlarges the province of taste; so that we may say, there is a taste of childhood, a taste of youth, and a manly taste. Each is beautiful in its season; but not so much so, when carried beyond its season. Not that the man ought to dislike the things that please the child, or the youth, but to put less value upon them compared with other beauties, with which he ought to be acquainted.

Our moral and rational powers justly claim dominion over the whole man. Even taste is not exempted from their authority; it must be subject to that authority in every case wherein we pretend to reason or dispute about matters of taste; it is the voice of reason that our love or our admiration ought to be proportioned to the merit of the object. When it is not grounded on real worth, it must be the effect of constitution, or of some habit or casual association. A fond mother may see a beauty in her darling child, or a fond author in his work, to which the rest of the world are blind. In such cases the affection is pre-

engaged, and, as it were, bribes the judgment, to make the object worthy of that affection. For the mind cannot be easy in putting a value upon an object beyond what it conceives to be due. When affection is not carried away by some natural or acquired bias, it naturally is and ought to be led by the judgment.

As, in the division which I have followed of our intellectual powers, I mentioned moral perception and consciousness, the reader may expect that some reason should be given, why they are not treated of in this place.

As to consciousness; what I think necessary to be said upon it has been already said, Essay VI. chap. 5. As to the faculty of moral perception, it is indeed a most important part of human understanding, and well worthy of the most attentive consideration, since without it we could have no conception of right and wrong, of duty and moral obligation, and since the first principles of morals, upon which all moral reasoning must be grounded, are its immediate dictates; but as it is an active as well as an intellectual power, and has an immediate relation to the other active powers of the mind, I apprehend that it is proper to defer the consideration of it till these be explained.

QUESTIONS FOR EXAMINATION.

Kinds of beauty various?
Rational origin of this variety?
Liking to persons and things different?
Whom do many of nature's beauty escape?
How far should our determinations of beauty be considered rational?
How are original and derivative beauty to be distinguished?
What analogy exists between the distinctions of grandeur and of beauty?
Which moral virtues possess intrinsic worth?
The original fountain of beauty?
Of what use is the observance of an analogy between the harmony of music and the harmony of minds?
How do the vegetable and animal kingdoms resemble each other?
Spence's account of personal beauty in the human species?
Which are the inseparable qualities of grace?

ANALYSIS

OF

ARISTOTLE'S LOGIC.

CHAPTER I.

OF THE FIRST THREE TREATISES

1. *Of the author.*—ARISTOTLE had very uncommon advantages; born in an age when the philosophical spirit in Greece had long flourished, and was in its greatest vigour; brought up in the court of Macedon, where his father was the king's physician; twenty years a favourite scholar of Plato, and tutor to Alexander the Great, who both honoured him with his friendship, and supplied him with every thing necessary for the prosecution of his inquiries.

These advantages he improved by indefatigable study and immense reading. "He was the first we know," says Strabo, "who composed a library." And in this the Egyptian and Pergamenian kings copied his example. As to his genius, it would be disrespectful to mankind not to allow an uncommon share to a man who governed the opinions of the most enlightened part of the species near two thousand years.

Bacon's opinion of Aristotle.—If his talents had been laid out solely for the discovery of truth, and the good of mankind, his laurels would have remained for ever fresh; but he seems to have had a greater passion for fame than for truth, and to have wanted rather to be admired as the prince of philosophers than to be useful: so that it is dubious whether there be in his character most of the philosopher or of the sophist. [The opinion of Lord Bacon is not without probability, that his ambition was as boundless as that of his royal pupil; the one aspiring at universal monarchy over the bodies and fortunes of men, the other over their opinions.] If this was the case, it cannot be said that the philosopher pursued his aim with less industry, less ability, or less success, than the hero.

His writings carry too evident marks of that philosophical pride, vanity, and envy, which have often sullied the character of the learned. He determines boldly things above all human knowledge; and enters upon the most difficult questions, as his pupil entered upon a battle, with full assurance of success. He delivers his decisions oracularly, and without any fear of mistake. Rather than confess his ignorance, he hides it under hard words and ambiguous expressions, of which his interpreters can make what they please. There is even reason to suspect that he wrote often with affected obscurity, either that the air of mystery might procure great veneration, or that his books might be understood only by the adepts who had been initiated in his philosophy.

Unfair conduct of Aristotle to his predecessors.—His conduct towards the writers that went before him has been much censured. After the manner of the Ottoman princes, says Lord Verulam, he thought his throne could not be secure unless he killed all his brethren. Ludovicus Vives charges him with detracting from all philosophers, that he might derive that glory to himself of which he robbed them. He rarely quotes an author but with a view to censure, and is not very fair in representing the opinions which he censures.

The faults we have mentioned are such as might be expected in a man who had the daring ambition to be transmitted to all future ages as the prince of philosophers, as one who had carried every branch of human knowledge to its utmost limit; and who was not very scrupulous about the means he took to obtain his end.

His most valuable works.—We ought, however, to do him the justice to observe, that although the pride and vanity of the sophist appear too much in his writings in abstract philosophy, yet, in natural history, the fidelity of his narrations seems to be equal to his industry; and he always distinguishes between what he knew and what he had by report. And, even in abstract philosophy, it would be unfair to impute to Aristotle all the faults, all the obscurities, and all the contradictions, that are to be found in his writings. The greatest part, and perhaps the best part, of his writings is lost. There is reason to doubt whether some of those we ascribe to him be really his, and whether what are his be not much vitiated and interpolated. These suspicions are justified by the fate of Aristotle's writings, which is judiciously related, from the best authorities, in Bayle's Dictionary, under the article *Tyrannion*, to which I refer.

His books on logic, which remain, are, 1. "One book of the Categories." 2. "One of Interpretation." 3. "First Analytics," two books. 4. "Last Analytics," two books. 5. "Topics," eight books. 6. "Of Sophisms," one book. Diogenes Laertius mentions many others that are lost. Those I have mentioned

have commonly been published together under the name of "Aristotle's Organon, or his Logic;" and, for many ages, "Porphyry's Introduction to the Categories" has been prefixed to them.

II. *Of Porphyry's Introduction.—Intricate questions concerning the predicables.*—In this Introduction, which is addressed to Chrysoarius, the author observes, that in order to understand Aristotle's doctrine concerning the categories, it is necessary to know what a *genus* is, what a *species*, what a *specific difference*, what a *property*, and what an *accident*; that the knowledge of these is also very useful in definition, in division, and even in demonstration: therefore he proposes, in this little tract, to deliver shortly and simply the doctrine of the ancients, and chiefly of the Peripatetics, concerning these five *predicables*; avoiding the more intricate questions concerning them; such as, [(1) Whether *genera* and *species* do really exist in nature? or (2) Whether they are only conceptions of the human mind? If they exist in nature, (3) Whether they are corporeal or incorporeal? and, (4) Whether they are inherent in the objects of sense, or disjoined from them?] "These," he says, "are very difficult questions, and require accurate discussion; but that he is not to meddle with them."

After this preface, he explains very minutely each of the five words above mentioned, divides and subdivides each of them, and then pursues all the agreements and differences between one and another through sixteen chapters.

III. *Of the Categories.*—The book begins with an explication of what is meant by univocal words, what by equivocal, and what by denominative. Then it is observed, that what we say is either simple, without composition or structure, as *man*, *horse*; or it has composition and structure, as, *a man fights*, *the horse runs*. [Next comes a distinction between a subject of predication; that is, a subject of which any thing is affirmed or denied, and a subject of inhesion.] [These things are said to be inherent in a subject, which, although they are not a part of the subject, cannot possibly exist without it, as figure in the thing figured.] [Of things that are, says Aristotle, some may be predicated of a subject, but are in no subject;] as *man* may be predicated of James or John, but is not in any subject. [Some, again, are in a subject, but can be predicated of no subject.] Thus, my knowledge in grammar is in me as its subject, but it can be predicated of no subject; because it is an individual thing. [Some are both in a subject, and may be predicated of a subject, as science, which is in the mind as its subject, and may be predicated of geometry.] [Lastly, some things can neither be in a subject, nor be predicated of any subject. Such are all individual substances, which *cannot be predicated*, *because they are*

individuals; and cannot be in a subject, because they are substances.] After some other subtleties about predicates and subjects, we come to the Categories themselves; the things above mentioned being called by the schoolmen the ante-prædicamenta. It may be observed, however, that, notwithstanding the distinction now explained, the *being a subject*, and the *being predicated truly of a subject*, are, in the analytics, used as synonymous phrases; and this variation of style has led some persons to think that the Categories were not written by Aristotle.

Things that may be expressed without composition or structure are, says the author, reducible to the following heads. [They are either *substance*, or *quantity*, or *quality*, or *relatives*, or *place*, or *time*, or *having*, or *doing*, or *suffering*.] These are the predicaments or categories. The first four are largely treated of in four chapters; the others are slightly passed over, as sufficiently clear of themselves. As a specimen, I shall give a summary of what he says on the category of substance.

[Substances are either primary, to wit, individual substances, or secondary, to wit, the genera and species of substances.] [Primary substances neither are in a subject, nor can be predicated of a subject; but all other things that exist either are in primary substances, or may be predicated of them.] For whatever can be predicated of that which is in a subject may also be predicated of the subject itself. Primary substances are more substances than the secondary; and of the secondary, the species is more a substance than the genus. *If there were no primary, there could be no secondary substances.*

[*The properties of substance* are these: 1. No substance is capable of intention or remission. 2. No substance can be in any other thing as its subject of inhesion. 3. No substance has a contrary; for one substance cannot be contrary to another; nor can there be contrariety between a substance and that which is no substance. 4. The most remarkable property of substance is, that one and the same substance may, by some change in itself, become the subject of things that are contrary. Thus, the same body may be at one time hot, at another cold.]

Let this serve as a specimen of Aristotle's manner of treating the Categories. After them, we have some chapters, which the schoolmen call post-predicamenta; wherein, first, the four kinds of opposition of terms are explained; [to wit, *relative*, *privative*, of *contrariety*, and of *contradiction*.] This is repeated in all systems of logic. Last of all, we have distinctions of the four Greek words which answer to the Latin ones, prius, simul, motus, and habere.

IV. *Of the book concerning interpretation.*—We are to consider, says Aristotle, what a noun is, what a verb, what affirmation, what negation, what speech. Words are the signs of

what passeth in the mind; writing is the sign of words. The signs both of writing and of words are different in different nations, but the operations of mind signified by them are the same. There are some operations of thought which are *neither true nor false.* These are expressed by nouns or verbs singly, and without composition.

A noun is a sound, which by compact signifies something without respect to time, and of which no part has signification by itself. The cries of beasts may have a natural signification, but they are not nouns: we give that name only to sounds which have their signification by compact. The cases of a noun, as the genitive, dative, are not nouns. *Non homo* is not a noun, but, for distinction's sake, may be called a *nomen infinitum.*

A verb signifies something by compact with relation to time. Thus, *valet* is a verb; but *valetudo* is a noun, because its signification has no relation to time. It is only the present tense of the indicative that is properly called a verb: the other tenses and moods are variations of the verb. *Non valet* may be called a *verbum infinitum.*

Speech is sound significant by compact, of which some part is also significant; and *it is either enunciative, or not enunciative. Enunciative speech is that which affirms or denies.* As to speech which is not enunciative, *such as a prayer or a wish,* the consideration of it belongs to oratory or poetry. Every enunciative speech must have a verb, or some variation of a verb. [Affirmation is the enunciation of one thing concerning another. Negation is the enunciation of one thing from another. Contradiction is an affirmation and negation that are opposite.] This is a summary of the first six chapters.

The seventh and eighth treat of the various kinds of enunciations or propositions, *universal, particular, indefinite, and singular;* and of the various kinds of opposition in propositions, and the axioms concerning them. These things are repeated in every system of logic. In the ninth chapter he endeavours to prove, by a long metaphysical reasoning, that propositions respecting future contingencies are not, determinately, either true or false; and that, if they were, it would follow that all things happen necessarily, and could not have been otherwise than as they are. The remaining chapters contain many minute observations concerning the equipollency of propositions both pure and modal.

CHAPTER II.

REMARKS.

1. *On the five predicables.*—The writers on logic have borrowed their materials almost entirely from Aristotle's "Organon" and "Porphyry's Introduction." The "Organon," however, was not written by Aristotle as one work. It comprehends various tracts, written with the view of making them parts of one whole, and afterwards thrown together by his editors under one name, on account of their affinity. Many of his books that are lost would have made a part of the "Organon," if they had been saved.

Aristotle not the inventor of the categories and predicables.—The three treatises, of which we have given a brief account, are unconnected with each other, and with those that follow. And although the first was undoubtedly compiled by Porphyry, and the two last probably by Aristotle, yet I consider them as the venerable remains of a philosophy more ancient than Aristotle. [Archytas of Tarentum, an eminent mathematician and philosopher of the *Pythagorean* school, is said to have wrote upon the ten categories; and the five predicables probably had their origin in the same school. (1) Aristotle, though abundantly careful to do justice to himself, does not claim the invention of either. (2) And Porphyry, without ascribing the latter to Aristotle, professes only to deliver the doctrine of the ancients, and chiefly of the Peripatetics, concerning them.]

The writers on logic have divided that science into three parts: [the first treating of simple apprehension and of terms; the second, of judgment and of propositions; and the third, of reasoning and of syllogisms.] The materials of the first part are taken from "Porphyry's Introduction" and the "Categories;" and those of the second from the book of "Interpretation."

A predicable, according to the grammatical form of the word, might seem to signify whatever might be predicated, that is, affirmed or denied of a subject; and in that sense every predicate would be a predicable. But logicians give a different meaning to the word. They divide propositions into certain classes, according to the relation which the predicate of the proposition bears to the subject. The first class is that wherein the predicate is the *genus* of the subject; as when we say, *this is a triangle, Jupiter is a planet.* In the second class, the predicate is a *species* of the subject; as when we say, *this triangle is rightangled.* A third class is when the predicate is the specific difference of the subject; as when we say, *every triangle has three sides and three angles.* A fourth, when the predicate is a property of the

subject; as when we say, *the angles of every triangle are equal to two right angles.* And a fifth class is when the predicate is something accidental to the subject; as when we say, *this triangle is neatly drawn.*

Each of these classes comprehends a great variety of propositions, having different subjects and different predicates; [but in each class the relation between the predicate and the subject is the same. Now, it is to this relation that logicians have given the name of *a predicable.* Hence it is, that although the number of predicates be infinite, yet the number of predicables can be no greater than that of the different relations which may be in propositions between the predicate and the subject.] And if all propositions belong to one or other of the five classes above mentioned, there can be but five predicables, to wit, *genus, species, differentia, proprium,* and *accidens.* These might, with more propriety perhaps, have been called *the five classes of predicates;* but use has determined them to be called *the five predicables.*

All predicates universals.—It may also be observed, that as some objects of thought are individuals, such as, *Julius Cæsar, the city of Rome,* so others are common to many individuals, as *good, great, virtuous, vicious.* Of this last kind are all things that are expressed by adjectives. Things common to many individuals were by the ancients called *universals.* [All predicates are universals, for they have the nature of adjectives; and, on the other hand, all universals may be predicates.] On this account, universals may be divided into the same classes as predicates; and as the five classes of predicates above mentioned have been called the five predicables, so, by the same kind of phraseology, they have been called the *five universals;* although they may more properly be called the *five classes of universals.*

First division of the predicables.—The doctrine of the five universals, or predicables, makes an essential part of every system of logic, and has been handed down without any change to this day. The very name of *predicables shows* that the author of this division, whoever he was, intended it as a complete enumeration of all the kinds of things that can be affirmed of any subject; and so it has always been understood. [It is accordingly implied in this division,* that all that can be affirmed of any thing whatever is either (1) the *genus* of the thing, (2) or its *species,* (3) or its *specific difference,* (4) or some *property,* (5) or *accident* belonging to it.]

Burgersdicius' definition of predicables.—[Burgersdick, a very acute writer in logic, seems to have been aware that strong objections might be made to the five predicables, considered as a complete enumeration: but, unwilling to allow any imperfection in this ancient division, he endeavours to restrain the meaning of

* Which is the Pythagorean.

the word *predicable*, so as to obviate objections. *Those things only*, says he, *are to be accounted predicables, which may be affirmed of* (1) *many individuals*, (2) *truly*, (3) *properly, and* (4) *immediately*.*

Its defect.—The consequence of putting such limitations upon the word *predicable* is, that in many propositions, perhaps in most, the predicate is not a predicable. But, admitting all his limitations, the enumeration will still be very incomplete; [for of many things we may affirm truly, properly, and immediately, their existence, their end, their cause, their effect, and various relations which they bear to other things.] These, and perhaps many more, are predicables in the strict sense of the word, no less than the five which have been so long famous.

Aristotle's predicables.—[Although Porphyry and all subsequent writers make the predicables to be in number five, yet Aristotle himself, in the beginning of the Topics, reduces them to *four*,† and demonstrates that there can be no more.] We shall give his demonstration when we come to the Topics; and shall only here observe, that as Burgersdick justifies the fivefold division, by restraining the meaning of the word *predicable*, so Aristotle justifies the fourfold division, by enlarging the meaning of the words *property* and *accident*.

After all, I apprehend that this ancient division of predicables, with all its imperfections, will bear a comparison with those which have been substituted in its stead by the most celebrated modern philosophers.

Locke's predicables.—[Locke, in his "Essay on the Human Understanding," having laid it down as a principle, that all our knowledge consists in perceiving certain agreements and disagreements between our ideas, reduces these agreements and disagreements to four heads; to wit, 1. Identity and diversity; 2. Relation; 3. Coexistence; 4. Real existence.‡ Here are four predicables given as a complete enumeration, and *yet not one of the ancient predicables is included in the number.*]

Predicables of Hume.—The author of the "Treatise of Human Nature," proceeding upon the same principle, that all our knowledge is only a perception of the relations of our ideas, observes, "That it may perhaps be esteemed an endless task to enumerate all those qualities which admit of comparison, and by which the ideas of philosophical relation are produced: but, if we diligently consider them, we shall find, that without difficulty they may be comprised under seven general heads: [1. Resemblance; 2. Identity; 3. Relations of Space and Time; 4. Relations of Quantity and Number; 5. Degrees of Quality; 6. Contrariety; 7. Causation." § Here again are seven predicables given as a

* And (5) naturally. † Vide page 588. ‡ Book iv. chap. 1.
§ Vol. i. pp. 33, and 125.

complete enumeration, *wherein all the predicables of the ancients, as well as two of Locke's, are left out.*]

The ancient why different from the modern division.—[The ancients, in their division, attended only to *categorical* propositions which have one subject and one predicate; and of these to such only as have *a general term for their subject.* The moderns, by their definition of knowledge, have been led to attend only to *relative* propositions, which express a relation between two subjects, *and these subjects they suppose to be always ideas.*]

II. *On the ten categories, and on divisions in general.*—The intention of the categories or predicaments is to muster every object of human apprehension under ten heads: for the categories are given as a complete enumeration of every thing which can be expressed without *composition* and *structure*; that is, of every thing that can be either the subject or the predicate of a proposition. So that as every soldier belongs to some company, and every company to some regiment, in like manner every thing that can be the object of human thought has its place in one or other of the ten categories; and, by dividing and subdividing properly the several categories, all the notions that enter into the human mind may be mustered in rank and file, like an army in the day of battle.

Aristotelian division of categories.—The perfection of the division of categories into *ten* heads has been strenuously defended by the followers of Aristotle, as well as that of the five predicables. They are indeed of kin to each other; they breathe the same spirit, and probably had the same origin. [By the one we are taught to marshal *every term* that can enter into a proposition, either as subject or predicate; and, by the other, we are taught all the possible *relations* which the subject can have to the predicate.] Thus the whole furniture of the human mind is presented to us at one view, and contracted, as it were, into a nut-shell. To attempt, in so early a period, a methodical delineation of the vast region of human knowledge, actual and possible, and to point out the limits of every district, was indeed magnanimous in a high degree, and deserves our admiration, while we lament that the human powers are unequal to so bold a flight.

[A regular distribution of things under proper classes or heads is, without doubt, *a great help both to* (1) *memory and* (2) *judgment.*] As the philosopher's province includes all things, human and divine, that can be objects of inquiry, he is naturally led to attempt some general division like that of the categories. And the invention of a division of this kind, which the speculative part of mankind acquiesced in for two thousand years, marks a superiority of genius in the inventor, whoever he was. Nor does it appear that the general divisions which, since the decline

of the Peripatetic philosophy, have been substituted in place of the ten categories, are more perfect.

Locke's division inadequate.—[Locke has reduced all things to *three* categories; viz. *substances*, *modes*, and *relations*. *In this division, time, space, and number, three great objects of human thought, are omitted.*]

Hume's division.*—[The author of the "Treatise of Human Nature" has reduced all things to two categories, viz. *ideas and impressions*:] a division which is very well adapted to his system, and which puts me in mind of another made by a very excellent mathematician in a printed thesis I have seen. In it the author, after a severe censure of the ten categories of the Peripatetics, maintains that there neither are nor can be more than *two categories of things, viz. data and quæsita.*

[There are two ends that may be proposed by such divisions. (1) The first is, to methodize or *digest in order what a man actually knows.* This is neither unimportant *nor impracticable*; and in proportion to the solidity and accuracy of a man's judgment, his divisions of the things he knows will be elegant and useful.] The same subject may admit, and even require, various divisions, according to the different points of view from which we contemplate it: nor does it follow, that because one division is good, therefore another is naught. [To be acquainted with the divisions of the logicians and metaphysicians, without a superstitious attachment to them, may be of use in dividing the same subjects, or even those of a different nature.] Thus Quintilian borrows from the ten categories his division of the topics of rhetorical argumentation. Of all methods of arrangement, the most antiphilosophical seems to be the invention of this age; I mean the arranging the arts and sciences by the letters of the alphabet, in dictionaries and encyclopedias. With these authors the categories are, A, B, C, &c.

(2) [Another end commonly proposed by such divisions, but *very rarely attained, is to exhaust the subject divided,* so that nothing that belongs to it shall be omitted.] It is one of the general rules of division in all systems of logic, that the division should be adequate to the subject divided: a good rule without doubt, but very often beyond the reach of human power. [To make a perfect division, a man must have a perfect comprehension of the whole subject at one view.] When our knowledge of the subject is imperfect, any division we can make must be like the first sketch of a painter, to be extended, contracted, or mended, as the subject shall be found to require. Yet nothing is more common, not only among the ancient, but even among modern philosophers, than to draw, from their incomplete divisions, conclusions which suppose them to be perfect.

* Vide Origin of Ideas.

A division is a repository which the philosopher frames for holding his ware in convenient order. The philosopher maintains that such or such a thing is not good ware, because there is no place in his ware-room that fits it. We are apt to yield to this argument in philosophy, but it would appear ridiculous in any other traffic.

Division introduced by Ramus objectionable.—[Peter Ramus, who had the spirit of a reformer in philosophy, and who had force of genius sufficient to shake the Aristotelian fabric in many parts, but insufficient to erect any thing more solid in its place, tried to remedy the imperfection of philosophical divisions, by introducing a new manner of dividing. *His divisions always consisted of two members, one of which was contradictory to the other;*] as if one should divide England into Middlesex and what is not Middlesex. [It is evident that these two members comprehend all England; for the logicians observe, that *a term along with its contradictory comprehends all things.*] In the same manner, we may divide what is not Middlesex into Kent and what is not Kent. Thus one may go on by divisions and subdivisions that are absolutely complete. This example may serve to give an idea of the spirit of Ramean divisions, which were in no small reputation about two hundred years ago.

[Aristotle was not ignorant of this kind of division. But he used it only as a *touchstone* to prove by induction the perfection of some other division, which indeed is the best use that can be made of it. 1. When applied to the common purpose of division, it is both *inelegant and burdensome to the memory;* 2. and, after it has put one out of breath by endless subdivisions, *there is still a negative term left behind*, which shows that you are no nearer the end of your journey than when you began.]

Until some more effectual remedy be found for the imperfection of divisions, I beg leave to propose one more simple than that of Ramus. [It is this: When you meet with a division of any subject imperfectly comprehended, add to the last member an *et cætera.*] That this *et cætera* makes the division complete, is undeniable; and therefore it ought to hold its place as a member, and to be always understood, whether expressed or not, until clear and positive proof be brought that the division is complete without it. And this same *et cætera* is to be the repository of all members that shall in any future time show a good and valid right to a place in the subject.

III. *Of distinctions.*—Having said so much of logical divisions, we shall next make some remarks upon distinctions.

Since the philosophy of Aristotle fell into disrepute, it has been a common topic of wit and raillery to inveigh against metaphysical distinctions. Indeed, the abuse of them in the scholastic ages seems to justify a general prejudice against them; and

shallow thinkers and writers have good reason to be jealous of distinctions, because they make sad work when applied to their flimsy compositions. But every man of true judgment, while he condemns distinctions that have no foundation in the nature of things, must perceive, that indiscriminately to decry distinctions is to renounce all pretensions to just reasoning: for, as false reasoning commonly proceeds from confounding things that are different, *so, without distinguishing such things, it is impossible to avoid error or detect sophistry.* The authority of Aquinas, or Suarez, or even of Aristotle, can neither stamp a real value upon distinctions of base metal, nor hinder the currency of those of true metal.

[*Some distinctions are verbal, others are real.*] The first kind distinguish the various meanings of a word, whether proper or metaphorical. Distinctions of this kind make a part of the grammar of a language, and are often absurd when translated into another language. [Real distinctions are equally good in all languages, and suffer no hurt by translation. They distinguish the different species contained under some general notion, or the different parts contained in one whole.]

Many of Aristotle's distinctions are verbal merely, and therefore more proper materials for a dictionary of the Greek language than for a philosophical treatise. At least, they ought never to have been translated into other languages, when the idiom of the language will not justify them; for this is to adulterate the language, to introduce foreign idioms into it without necessity or use, and to make it ambiguous where it was not. The distinctions in the end of the categories of the four words, *prius, simul, motus,* and *habere,* are all verbal.

The modes or species of *prius*, according to Aristotle, are five. One thing may be prior to another; first, in point of time; secondly, in point of dignity; thirdly, in point of order; and so forth. The modes of *simul* are only three. It seems this word was not used in the Greek with so great latitude as the other, although they are relative terms.

[The modes or species of motion he makes to be six, viz. generation, corruption, increase, decrease, alteration, and change of place.]

The modes or species of *having* are eight, 1. Having a quality or habit, as having wisdom. 2. Having quantity or magnitude. 3. Having things adjacent, as having a sword. 4. Having things as parts, as having hands or feet. 5. Having in a part or on a part, as having a ring on one's finger. 6. Containing, as a cask is said to have wine. 7. Possessing, as having lands or houses. 8. Having a wife.

[Another distinction of this kind is Aristotle's distinction of causes; of which he makes four kinds, efficient, material, formal,

and final.] These distinctions may deserve a place in a dictionary of the Greek language; but, in English or Latin, they adulterate the language. Yet so fond were the schoolmen of distinctions of this kind, that they added to Aristotle's enumeration an impulsive cause, an exemplary cause, and I do not know how many more. We seem to have adopted into English a final cause; but it is merely a term of art, borrowed from the Peripatetic philosophy, without necessity or use; for the English word *end* is as good as *final cause*, though not so long nor so learned.

IV. *Of definitions.*—It remains that we make some remarks on Aristotle's definitions, which have exposed him to much censure and ridicule. Yet I think it must be allowed, that in things *which need definition*, and admit of it, his definitions are commonly judicious and accurate; and, had he attempted to define such things only, his enemies had wanted great matter of triumph. I believe it may likewise be said in his favour, that, until Locke's essay was wrote, there was nothing of importance delivered by philosophers, with regard to definition, beyond what Aristotle has said upon that subject.

He considers a definition as a speech declaring what a thing is. Every thing essential to the thing defined, and nothing more, must be contained in the definition. Now, the essence of a thing consists of these two parts: first, What is common to it with other things of the same kind: and, secondly, What distinguishes it from other things of the same kind. The first is called the *genus* of the thing, the second its *specific difference.* The definition, therefore, consists of these two parts. And, for finding them, we must have recourse to the ten categories, in one or other of which every thing in nature is to be found. Each category is a *genus*, and is divided into so many species, which are distinguished by their specific differences. Each of these species is again subdivided into so many species, with regard to which it is a genus. This division and subdivision continues until we come to the lowest species, which can only be divided into *individuals distinguished from one another, not by any specific difference, but by accidental differences of time, place, and other circumstances.*

[The category itself, being the highest genus, is in no respect a species, and the lowest *species* is in no respect a *genus;* but every intermediate order is a genus compared with those that are below it, and a species compared with those above it.] [To find the definition of any thing, therefore, you must take the genus which is immediately above its place in the category, and the specific *difference*, by which it is distinguished from other species of the same *genus*. These two make a perfect definition.] This I take to be the substance of Aristotle's system, and probably the system of the Pythagorean school, before Aristotle, concerning definition.

But notwithstanding the specious appearance of this system, it has its defects. (1) [Not to repeat what was before said of the imperfection of the division of things into ten categories, the subdivisions of each category are no less imperfect.] Aristotle has given some subdivisions of a few of them; and, as far as he goes, his followers pretty unanimously take the same road. But, when they attempt to go farther, they take very different roads. It is evident, that if the series of each category could be completed, and the division of things into categories could be made perfect, (2) [still the (1) highest genus in each category could not be defined, because it is not a species; nor could (2) individuals be defined, because they have no specific difference. There are also many species of things whose (3) specific difference cannot be expressed in language, even when it is evident to sense, or to the understanding. Thus, green, red, and blue, are very distinct species of colour; but who can express in words wherein green differs from red or blue?]

Without borrowing light from the ancient system, we may perceive that every *definition must consist of words that need no definition;* and that to define the common words of a language that have no ambiguity is trifling, if it could be done; the only use of a definition being to give a clear and adequate conception of the meaning of a word.

The logicians indeed distinguish between the definition of a word, and the definition of a thing; considering the former as the mean office of a lexicographer, but the last as the grand work of a philosopher. But what they have said about the definition of a thing, if it have a meaning, is beyond my comprehension. [All the rules of definition agree to the definition of a word: and if they mean, by the definition of a thing, the giving an adequate conception of the nature and essence of any thing that exists, this is impossible, and is the vain boast of men unconscious of the weakness of human understanding.]

The works of God are but imperfectly known by us. We see their outside, or perhaps we discover some of their qualities and relations, by observation and experiment, assisted by reasoning: but, even of the simplest of them, we can give no definition that comprehends its real essence. [It is justly observed by Locke, that nominal essences only, which are the creatures of our own minds, are perfectly comprehended by us, or can be properly defined; and even of these there are many too simple in their nature to admit of definition.] When we cannot give precision to our notions by a definition, we must endeavour to do it by attentive reflection upon them, by observing minutely their agreements and differences, and especially by a right understanding of the powers of our own minds, by which such notions are formed.

The principles laid down by Locke with regard to definition,

and with regard to the abuse of words, carry conviction along with them. I take them to be one of the most important improvements made in logic since the days of Aristotle; not so much because they enlarge our knowledge, as because they make us sensible of our ignorance, and show that a great part of what speculative men have admired as profound philosophy, is only a darkening of knowledge by words without understanding.

V. *Of the structure of speech.*—The few hints contained in the beginning of the book concerning interpretation relating to the structure of speech, have been left out in treatises of logic, as belonging rather to grammar; yet I apprehend this is a rich field of philosophical speculation. [Language being the express image of human thought, the analysis of the one must correspond to that of the other.] Nouns adjective and substantive, verbs active and passive, with their various moods, tenses, and persons, must be expressive of a like variety in the modes of thought. Things that are distinguished in all languages, such as substance and quality, action and passion, cause and effect, must be distinguished by the natural powers of the human mind. The philosophy of grammar, and that of the human understanding, are more nearly allied than is commonly imagined.

The structure of language was pursued to a considerable extent by the ancient commentators upon this book of Aristotle. Their speculations upon this subject, which are neither the least ingenious nor the least useful part of the Peripatetic philosophy, were neglected for many ages, and lay buried in ancient manuscripts, or in books little known, till they were lately brought to light by the learned Mr. Harris, in his Hermes.

The definitions given by Aristotle of a noun, of a verb, and of speech, will hardly bear examination. It is easy in practice to distinguish the various parts of speech; but very difficult, if at all possible, to give accurate definitions of them.

[He observes justly, that besides that kind of speech called a *proposition*, which is always either true or false, there are other kinds which are neither true nor false, such as a prayer or wish; to which we may add, a question, a command, a promise, a contract, and many others.] These Aristotle pronounces to have nothing to do with his subject, and remits them to oratory or poetry; and so they have remained banished from the regions of philosophy to this day: yet I apprehend that an analysis of such speeches, and of the operations of mind which they express, would be of real use, [and perhaps would discover how imperfect an enumeration the logicians have given of the powers of human understanding, when they reduce them to simple apprehension, judgment, and reasoning.]

VI. *Of propositions.*—[Mathematicians use the word *proposition* in a larger sense than logicians. A *problem* is called a

proposition in mathematics, but in logic it is not a proposition: it is one of those speeches which are not enunciative, and which Aristotle remits to oratory or poetry.

A proposition, according to Aristotle, is a speech wherein one thing is affirmed or denied of another.] Hence it is easy to distinguish the thing affirmed or denied, which is called *the predicate*, from the thing of which it is affirmed or denied, which is called *the subject;* and these two are called *the terms of the proposition.* Hence, likewise, it appears that propositions are either affirmative or negative, and this is called *their quality.* All affirmative propositions have the same quality, so likewise have all negative; but an affirmative and a negative are contrary in their quality.

When the subject of a proposition is a general term, the predicate is affirmed or denied either of the whole or of a part. Hence propositions are distinguished into universal and particular. "All men are mortal," is a universal proposition; "Some men are learned," is a particular; and this is called *the quantity of the proposition.* All universal propositions agree in quantity, as also all particular; but a universal and a particular are said to differ in quantity. A proposition is called *indefinite,* when there is no mark either of universality or particularity annexed to the subject: thus, "Man is of few days," is an indefinite proposition; but it must be understood either as universal or as particular, and therefore is not a third species, but by interpretation is brought under one of the other two.

There are also singular propositions, which have not a general term, but an individual, for their subject; as, "Alexander was a great conqueror." [These are considered by logicians as universal, because, the subject being indivisible, the predicate is affirmed or denied of the whole, and not of a part only.] Thus all propositions, with regard to quality, are either affirmative or negative, and, with regard to quantity, are universal or particular; and, taking in both quantity and quality, they are universal affirmatives, or universal negatives, or particular affirmatives, or particular negatives. These four kinds, after the days of Aristotle, came to be named by the names of the four first vowels, *A, E, I, O,* according to the following distich:

> Asserit A, negat E, sed universaliter ambæ;
> Asserit I, negat O, sed particulariter ambo.

Objection to this analysis of propositions.—When the young logician is thus far instructed in the nature of propositions, he is apt to think there is no difficulty in analysing any proposition, and showing its subject and predicate, its quantity and quality; and indeed, unless he can do this, he will be unable to apply the rules of logic to use. Yet he will find there are some difficulties

in this analysis, which are overlooked by Aristotle altogether; and although they are sometimes touched, they are not removed by his followers. [For, 1. There are propositions in which it is difficult to find a subject and a predicate; as in these, "It rains, it snows." 2. In some propositions, either term may be made the subject or the predicate, as you like best; as in this, "Virtue is the road to happiness." 3. The same example may serve to show, that it is sometimes difficult to say whether a proposition be universal or particular. 4. The quality of some propositions is so dubious, that logicians have never been able to agree whether they be affirmative or negative; as in this proposition, "Whatever is insentient is not an animal." 5. As there is one class of propositions which has only two terms, viz. *one subject and one predicate, which are called categorical propositions;* so there are many classes that have more than two terms.] What Aristotle delivers in this book is applicable only to *categorical* propositions; [and to them only the rules concerning the conversion of propositions, and concerning the figures and modes of syllogisms, are accommodated.] The subsequent writers of logic have taken notice of some of the many classes of complex propositions, and have given rules adapted to them; but, finding this work endless, they have left us to manage the rest by the rules of common sense.

CHAPTER III.

ACCOUNT OF THE FIRST ANALYTICS.

I. *Of the conversion of propositions.*—In attempting to give some account of the Analytics and of the Topics of Aristotle, ingenuity requires me to confess, that though I have often purposed to read the whole with care, and to understand what is intelligible, yet my courage and patience always failed before I had done. Why should I throw away so much time and painful attention upon a thing of so little real use? If I had lived in those ages when the knowledge of Aristotle's Organon entitled a man to the highest rank in philosophy, ambition might have induced me to employ upon it some years of painful study; and less, I conceive, would not be sufficient. Such reflections as these always got the better of my resolution, when the first ardour began to cool. All I can say is, that I have read some parts of the different books with care, some slightly, and some, perhaps, not at all. I have glanced over the whole often, and when any thing attracted my attention, have dipped into it till my appetite was satisfied. Of all reading it is the most dry and

most painful, employing an infinite labour of demonstration, about things of the most abstract nature, delivered in a laconic style, and often, I think, with affected obscurity; and all to prove general propositions, which, when applied to particular instances, appear self-evident.

There is probably but little in the Categories, or in the book of Interpretation, that Aristotle could claim as his own invention; but the whole theory of syllogisms he claims as his own, and as the fruit of much time and labour. And indeed it is a stately fabric, a monument of a great genius, which we could wish to have been more usefully employed. There must be something, however, adapted to please the human understanding, or to flatter human pride, in a work which occupied men of speculation for more than a thousand years. These books are called *Analytics*, because the intention of them is to resolve all reasoning into its simple ingredients.

The first book of the first Analytics, consisting of forty-six chapters, may be divided into four parts; the first treating of the conversion of propositions; the second, of the structure of syllogisms, in all the different figures and modes; the third, of the invention of a middle term; and the last, of the resolution of syllogisms. We shall give a brief account of each.

To convert a proposition is to infer from it another proposition, whose subject is the predicate of the first, and whose predicate is the subject of the first. This is reduced by Aristotle to three rules. [1. An universal negative may be converted into an universal negative: thus, "No man is a quadruped;" therefore, "No quadruped is a man." 2. An universal affirmative can be converted only into a particular affirmative: thus, "All men are mortal;" therefore, "Some mortal beings are men." 3. A particular affirmative may be converted into a particular affirmative; as, "Some men are just;" therefore, "Some just persons are men."] When a proposition may be converted without changing its quantity, this is called *simple conversion;* but when the quantity is diminished, as in the universal affirmative, it is called *conversion per accidens.*

There is another kind of conversion omitted in this place by Aristotle, but supplied by his followers, called *conversion by contraposition,* in which the term that is contradictory to the predicate is put for the subject, and the quality of the proposition is changed; as, "All animals are sentient;" therefore, "What is insentient is not an animal." [A fourth rule of conversion, therefore, is, that an universal affirmative and a particular negative may be converted by contraposition.]

II. *Of the figures and modes of pure syllogisms.*—A syllogism is an argument, or reasoning, consisting of three propositions, the last of which, called the *conclusion,* is inferred

from the two preceding, which are called the *premises.* The conclusion having two terms, a subject and a predicate, its predicate is called the *major* term, and its subject the *minor* term. In order to prove the conclusion, each of its terms is, in the premises, compared with a third term, called the *middle* term. By this means one of the premises will have for its two terms the major term and the middle term; and this premise is called the *major* premise, or the *major* proposition of the syllogism. The other premise must have for its two terms the minor term and the middle term, and it is called the *minor* proposition. Thus the syllogism consists of three propositions, distinguished by the names of the *major*, the *minor*, and the *conclusion:* and although each of these has two terms, a subject and a predicate, yet there are only three different terms in all. The major term is always the predicate of the conclusion, and is also either the subject or predicate of the major proposition. The minor term is always the subject of the conclusion, and is also either the subject or predicate of the minor proposition. The middle term never enters into the conclusion, but stands in both premises, either in the position of subject or of predicate.

The division of syllogisms two-fold. (1) [According to the various positions which the middle term may have in the premises, syllogisms are said to be of various figures.] Now, all the possible positions of the middle term are only four: for, first, it may be the subject of the major proposition, and the predicate of the minor, and then the syllogism is of the first figure; or it may be the predicate of both premises, and then the syllogism is of the second figure; or it may be the subject of both, which makes a syllogism of the third figure; or it may be the predicate of the major proposition, and the subject of the minor, which makes the fourth figure. Aristotle takes no notice of the fourth figure. It was added by the famous Galen, and is often called *the Galenical figure.*

(2) [There is another division of syllogisms according to their modes.] The mode of a syllogism is determined by the quality and quantity of the propositions of which it consists. Each of the three propositions must be either an universal affirmative or an universal negative, or a particular affirmative, or a particular negative. These four kinds of propositions, as was before observed, have been named by the four vowels, A, E, I, O; by which means the mode of a syllogism is marked by any three of those four vowels. Thus, A, A, A, denotes that mode in which the major, minor, and conclusion, are all universal affirmatives; E, A, E, denotes that mode in which the major and conclusion are universal negatives, and the minor is an universal affirmative.

[To know all the possible modes of syllogism, we must find how many different combinations may be made of three out of the four vowels; and from the art of combination the number is

found to be sixty-four.] So many possible modes there are in every figure, consequently in the three figures of Aristotle there are one hundred and ninety-two, and in all the four figures two hundred and fifty-six.

Now, the theory of syllogism requires that we show what are the particular modes in each figure which do or do not form a just and conclusive syllogism, that so the legitimate may be adopted, and the spurious rejected. This Aristotle has shown in the first three figures, examining all the modes one by one, and passing sentence upon each; and from this examination he collects some rules which may aid the memory in distinguishing the false from the true, and point out the properties of each figure.

The first figure has only four legitimate modes. The major proposition in this figure must be universal, and the minor affirmative; and it has this property, that it yields conclusions of all kinds, affirmative and negative, universal and particular.

The second figure has also four legitimate modes. Its major proposition must be universal, and one of the premises must be negative. It yields conclusions both universal and particular, but all negative.

The third figure has six legitimate modes. Its minor must always be affirmative; and it yields conclusions both affirmative and negative, but all particular.

Besides the rules that are proper to each figure, Aristotle has given some that are common to all, by which the legitimacy of syllogisms may be tried. These may, I think, be reduced to five. [1. There must be only three terms in a syllogism. As each term occurs in two of the propositions, it must be precisely the same in both: if it be not, the syllogism is said to have four terms, which makes a vitious syllogism. 2. The middle term must be taken universally in one of the premises. 3. Both premises must not be particular propositions, nor both negative. 4. The conclusion must be particular, if either of the premises be particular; and negative, if either of the premises be negative. 5. No term can be taken universally in the conclusion, if it be not taken universally in the premises.]

For understanding the second and fifth of these rules, it is necessary to observe, that a term is said to be taken universally, not only when it is the subject of an universal proposition, but when it is the predicate of a negative proposition; on the other hand, a term is said to be taken particularly, when it is either the subject of a particular, or the predicate of an affirmative proposition.

III. *Of the invention of a middle term.*—The third part of this book contains rules, general and special, for the invention of a middle term; and this the author conceives to be of great utility. The general rules amount to this, That you are to consider well both terms of the proposition to be proved; their definition, their properties, the things which may be affirmed or

denied of them, and those of which they may be affirmed or denied; these things collected together are the materials from which your middle term is to be taken.

The special rules require you to consider the quantity and quality of the proposition to be proved, that you may discover in what mode and figure of syllogism the proof is to proceed. Then, from the materials before collected, you must seek a middle term which has that relation to the subject and predicate of the proposition to be proved, *which the nature of the syllogism requires*. Thus, suppose the proposition I would prove is an universal affirmative, I know by the rules of syllogisms that there is only one legitimate mode in which an universal affirmative proposition can be proved; and that is the first mode of the first figure. I know, likewise that, in this mode, both the premises must be universal affirmatives; and that the middle term must be the subject of the major, and the predicate of the minor. Therefore of the terms collected according to the general rule, I seek out one or more which have these two properties; first, That the predicate of the proposition to be proved can be universally affirmed of it; and secondly, That it can be universally affirmed of the subject of the proposition to be proved. Every term you can find, which has those two properties, will serve you as a middle term, but no other. In this way, the author gives special rules for all the various kinds of propositions to be proved; points out the various modes in which they may be proved, and the properties which the middle term must have to make it fit for answering that end. And the rules are illustrated, or rather, in my opinion, purposely darkened, by putting letters of the alphabet for the several terms.

IV. *Of the remaining part of the first book.*—The resolution of syllogisms requires no other principles but these before laid down for constructing them. However, it is treated of largely, and rules laid down for reducing reasoning to syllogisms, by supplying one of the premises, when it is understood, by rectifying inversions, and putting the propositions in the proper order.

Here he speaks also of hypothetical syllogisms, which he acknowledges cannot be resolved into any of the figures, although there be many kinds of them that ought diligently to be observed, and which he promises to handle afterwards. But this promise is not fulfilled, as far as I know, in any of his works that are extant.

V. *Of the second book of the first Analytics.*—The second book treats of the powers of syllogisms, and shows, in twenty-seven chapters, how we may perform many feats by them, and what figures and modes are adapted to each. Thus, in some syllogisms, several distinct conclusions may be drawn from the

same premises: in some, true conclusions may be drawn from false premises: in some, by assuming the conclusion and one premise, you may prove the other; you may turn a direct syllogism into one leading to an absurdity.

Change in the form of disputation introduced by Aristotle.—We have likewise precepts given in this book, both to the assailant in a syllogistical dispute, how to carry on his attack with art, so as to obtain the victory, and to the defendant, how to keep the enemy at such a distance as that he shall never be obliged to yield. [From which we learn, that Aristotle introduced in his own school the practice of *syllogistical disputation*, instead of the *rhetorical disputations* which the sophists were wont to use in more ancient times.]

CHAPTER IV.

REMARKS.

I. *Of the conversion of propositions.*—We have given a summary view of the theory of pure syllogisms as delivered by Aristotle, a theory of which he claims the sole invention. And I believe it will be difficult, in any science, to find so large a system of truths of so very abstract and so general a nature, all fortified by demonstration, and all invented and perfected by one man. It shows a force of genius, and labour of investigation, equal to the most arduous attempts. I shall now make some remarks upon it.

As to the conversion of propositions, the writers on logic commonly satisfy themselves with illustrating each of the rules by an example, conceiving them to be self-evident when applied to particular cases. But Aristotle has given demonstrations of the rules he mentions. As a specimen, I shall give his demonstration of the first rule. "Let A B be an universal negative proposition; I say, that if A is in no B, it will follow that B is in no A. If you deny this consequence, let B be in some A, for example, in C; then the first supposition will not be true; for C is of the B's." [In this demonstration, if I understand it, the third rule of conversion is assumed, that if B is in some A, then A must be in some B, which indeed is contrary to the first supposition. If the third rule be assumed for proof of the first, the proof of all the three goes round in a circle; for the second and third rules are proved by the first.] This is a fault in reasoning which Aristotle condemns, and which I would be very unwilling to charge him with, if I could find any better meaning in his demonstration. But it is indeed a fault very difficult to be avoided, when men *attempt to prove things that are self-evident.*

[The rules of conversion cannot be applied to all propositions, but only to those that are *categorical;* and we are left to the direction of common sense in the conversion of other propositions.] To give an example: Alexander was the son of Philip; therefore Philip was the father of Alexander: A is greater than B; therefore B is less than A. These are conversions which, as far as I know, do not fall within any rule in logic; nor do we find any loss for want of a rule in such cases.

[Even in the conversion of categorical propositions, it is not enough to transpose the subject and predicate. Both must undergo some change, in order to fit them for their new station: for, in every proposition the subject must be a substantive, or have the force of a substantive; and the predicate must be an adjective, or have the force of an adjective. Hence it follows that when the subject is an individual, the proposition admits not of conversion.] [How, for instance, shall we convert this proposition, God is omniscient?]

The doctrine of conversion partially inadequate.—[These observations show that the doctrine of the conversion of propositions is not so complete as it appears. 1. The rules are laid down without any limitation, yet they are fitted only to one class of propositions, viz. the *categorical;* 2, and of these only to such as have a *general* term for their subject.]

II. *Three additions made to the theory of syllogisms after Aristotle's time.*—Although the logicians have enlarged the first and second parts of logic, by explaining some technical words and distinctions which Aristotle has omitted, and by giving names to some kinds of propositions which he overlooks; yet, in what concerns the theory of categorical syllogisms, he is more full, more minute and particular, than any of them; so that they seem to have thought this capital part of the "Organon" rather redundant than deficient.

(1) [It is true that Galen added *a fourth figure* to the three mentioned by Aristotle. But there is reason to think that Aristotle omitted the fourth figure, not through ignorance or inattention, but of design, as containing only some indirect modes which, when properly expressed, fall into the first figure.]

(2) [It is true also that Peter Ramus, a professed enemy of Aristotle, introduced some new modes that are adapted to *singular* propositions, and that Aristotle takes no notice of singular propositions, either in his rules of conversion, or in the modes of syllogism. But the friends of Aristotle have shown that this improvement of Ramus is more specious than useful. Singular propositions have the force of universal propositions, and are subject to the same rules. *The definition given by Aristotle of an universal proposition applies to them,* and therefore he might

think that there was no occasion to multiply the modes of syllogism upon their account.]

These attempts, therefore, show rather inclination than power to discover any material defect in Aristotle's theory.

(3) [The most valuable addition made to the theory of categorical syllogisms seems to be the invention of those *technical names* given to the legitimate modes, by which they may be easily remembered, and which have been comprised in these barbarous verses:]

"*Barbara, Celarent, Darii, Ferio*, dato primæ;
Cesare, Camestris, Festino, Baroco, secundæ;
Tertia grande sonans recitat *Darapti, Felapton*
Adjungens *Disamis, Datisi, Bocardo, Ferison*."

In these verses, every legitimate mode belonging to the three figures has a name given to it, by which it may be distinguished and remembered. And this name is so contrived as to denote its nature; for the name has three vowels, which denote the kind of each of its propositions.

Thus, a syllogism in *Bocardo* must be made up of the propositions denoted by the three vowels, O, A, O; that is, its major and conclusion must be particular negative propositions, and its minor an universal affirmative; and, being in the third figure, the middle term must be the subject of both premises.

This is the mystery contained in the vowels of those barbarous words. But there are other mysteries contained in their consonants; for, by their means, a child may be taught to reduce any syllogism of the second or third figure to one of the first. So that the four modes of the first figure being directly proved to be conclusive, all the modes of the other two are proved at the same time, by means of this operation of reduction. For the rules and manner of this reduction, and the different species of it, called *ostensive* and *per impossible*, I refer to the logicians, that I may not disclose all their mysteries.

The invention contained in these verses is so ingenious, and so great an adminicle to the dexterous management of syllogisms, that I think it very probable that Aristotle had some contrivance of this kind, which was kept as one of the secret doctrines of his school, and handed down by tradition, until some person brought it to light. This is offered only as a conjecture, leaving it to those who are better acquainted with the most ancient commentators on the Analytics, either to confute or confirm it.

III. *Of examples used to illustrate this theory.—Caution in the use of examples.*—[We may observe that Aristotle hardly ever gives examples of real syllogisms to illustrate his rules. In demonstrating the legitimate modes, he takes A, B, C, for the terms of the syllogism.] Thus, the first mode of the first figure is demonstrated by him in this manner: "For," says

he, "if A is attributed to every B, and B to every C, it follows necessarily that A may be attributed to every C." For disproving the illegitimate modes, he uses the same manner; with this difference, that he commonly, for an example, gives three real terms, such as, *bonum, habitus, prudentia;* of which three terms you are to make up a syllogism of the figure and mode in question, which will appear to be inconclusive.

[The commentators and systematical writers in logic have supplied this defect, and given us *real examples* of every legitimate mode in all the figures. We acknowledge this to be charitably done, in order to assist the conception in matters so very abstract; but whether it was prudently done, for the honour of the art, may be doubted. I am afraid this was to uncover the nakedness of the theory; *it has undoubtedly contributed to bring it into contempt;*] for when one considers the silly and uninstructive reasonings that have been brought forth by this grand organ of science, he can hardly forbear crying out, "Parturiunt montes, et nascitur ridiculus mus." Many of the writers of logic are acute and ingenious, and much practised in the syllogistical art; and there must be some reason why the examples they have given of syllogisms are so lean.

We shall speak of the reason afterwards,* and shall now give a syllogism in each figure as an example.

No work of God is bad;
The natural passions and appetites of men are the work of God;
Therefore none of them is bad.

In this syllogism, the middle term, *work of God,* is the subject of the major, and the predicate of the minor; so that the syllogism is of the first figure. The mode is that called *Celarent;* the major and conclusion being both universal negatives, and the minor an universal affirmative. It agrees to the rules of the figure, as the major is universal, and the minor affirmative; it is also agreeable to all the general rules; so that it maintains its character in every trial. And to show of what ductile materials syllogisms are made, we may, by converting simply the major proposition, reduce it to a good syllogism of the second figure, and of the mode *Cesare,* thus:

Whatever is bad is not the work of God;
All the natural passions and appetites of men are the work of God;
Therefore they are not bad.

Another example:

Every thing virtuous is praiseworthy;
Some pleasures are not praiseworthy;
Therefore some pleasures are not virtuous.

Here the middle term *praiseworthy* being the predicate of

* Vide p. 581.

both premises, the syllogism is of the second figure; and seeing it is made up of the propositions, A, O, O, the mode is *Baroco.* It will be found to agree both with the general and special rules; and it may be reduced into a good syllogism of the first figure upon converting the major by contraposition, thus:

What is not praiseworthy is not virtuous;
Some pleasures are not praiseworthy;
Therefore some pleasures are not virtuous.

That this syllogism is conclusive common sense pronounces, and all logicians must allow; but it is somewhat unpliable to rules, and requires a little straining to make it tally with them.

That it is of the first figure is beyond dispute; but to what mode of that figure shall we refer it? This is a question of some difficulty: for, in the first place, the premises seem to be both negative, which contradicts the third general rule; and, moreover, it is contrary to a special rule of the first figure, that the minor should be negative. These are the difficulties to be removed.

Some logicians think that the two negative particles in the major are equivalent to an affirmative; and that therefore the major proposition, "What is not praiseworthy is not virtuous," is to be accounted an affirmative proposition. This, if granted, solves one difficulty; but the other remains. The most ingenious solution, therefore, is this: let the middle term be *not praiseworthy.* Thus, making the negative particle a part of the middle term, the syllogism stands thus:

Whatever is *not praiseworthy* is not virtuous;
Some pleasures are *not praiseworthy;*
Therefore some pleasures are not virtuous.

By this analysis, the major becomes a universal negative, the minor a particular affirmative, and the conclusion a particular negative, and so we have a just syllogism in *Ferio.*

[We see, by this example, that *the quality of propositions is not so invariable* but that, when occasion requires, an affirmative may be degraded into a negative, or a negative exalted to an affirmative.]

Another example:

All Africans are black;
All Africans are men;
Therefore some men are black.

This is of the third figure, and of the mode *Darapti;* and it may be reduced to *Darii* in the first figure, by converting the minor.

All Africans are black;
Some men are Africans;
Therefore some men are black.

By this time I apprehend the reader has got as many examples

of syllogisms as will stay his appetite for that kind of entertainment.

IV. *Of the demonstration of the theory.*—Aristotle and all his followers have thought it necessary, in order to bring this theory of categorical syllogisms to a science, to demonstrate both that the fourteen authorized modes conclude justly, and that none of the rest do. Let us now see how this has been executed.

Aristotelian method of establishing the doctrine of syllogisms.—[As to the legitimate modes, Aristotle and those who follow him the most closely demonstrate the four modes of the first figure directly *from an axiom called the Dictum de omni et nullo.*] The amount of the axiom is, That what is affirmed of a whole genus may be affirmed of all the species and individuals belonging to that genus; and that what is denied of the whole genus may be denied of its species and individuals. The four modes of the first figure are evidently included in this axiom. [And as to the legitimate modes of the other figures, they are proved by reducing them to some mode of the first.] Nor is there any other principle assumed in these reductions but the axioms concerning the conversion of propositions, and, in some cases, the axioms concerning the opposition of propositions.

As to the illegitimate modes, Aristotle has taken the labour to try and condemn them one by one in all the three figures; but this is done in such a manner that it is very painful to follow him. To give a specimen: In order to prove that those modes of the first figure, in which the major is particular, do not conclude, he proceeds thus:—"If A is or is not in some B, and B in every C, no conclusion follows. Take for the terms in the affirmative case, *good, habit, prudence*; in the negative, *good, habit, ignorance.*" This laconic style, the use of symbols not familiar, and, in place of giving an example, his leaving us to form one from three assigned terms, give such embarrassment to a reader, that he is like one reading a book of riddles.

[Having (1) thus ascertained the true and false modes of a figure, (2) he subjoins the *particular* rules of that figure, which seem to be deduced from the particular cases before determined. (3) The *general* rules come last of all, as a general corollary from what goes before.]

The method of his followers preferable.—[I know not whether it is from a diffidence of Aristotle's demonstrations, or from an apprehension of their obscurity, or from a desire of improving upon his method, that almost all the writers in logic I have met with *have inverted his order*, beginning where he ends, and ending where he begins.] They first demonstrate the general rules, which belong to all the figures, from three axioms; then, from the general rules and the nature of each figure, they demonstrate the special rules of each figure. When this is done, nothing

remains but to apply these general and special rules, and to reject every mode which contradicts them.

[This method has a very scientific appearance; and when we consider that, by a few rules once demonstrated, a hundred and seventy-eight false modes are destroyed *at one blow*, which Aristotle had the trouble to put to death *one by one*, it seems to be a great improvement.] I have only one objection to the three axioms.

The three axioms are these: 1. Things which agree with the same third agree with one another. 2. When one agrees with the third, and the other does not, they do not agree with one another. 3. When neither agrees with the third, you cannot thence conclude either that they do or do not agree with one another. [If these axioms are applied to mathematical quantities, to which they seem to relate when taken literally, they have all the evidence that an axiom ought to have: but the logicians apply them in an *analogical* sense to things of *another* nature.] In order, therefore, to judge whether they are truly axioms, we ought to strip them of their *figurative* dress, and to set them down in plain English, as the logicians understand them. They amount, therefore, to this: 1. If two things be affirmed of a third, or the third be affirmed of them; or if one be affirmed of the third, and the third affirmed of the other, then they may be affirmed one of the other. 2. If one is affirmed of the third, or the third of it, and the other denied of the third, or the third of it, they may be denied one of the other. 3. If both are denied of the third, or the third of them, or if one is denied of the third, and the third denied of the other, nothing can be inferred.

When the three axioms are thus put in plain English, they seem not to have that degree of evidence which axioms ought to have; and if there is any defect of evidence in the axioms, this defect will be communicated to the whole edifice raised upon them.

Valid objection to syllogistic reasoning.—[It may even be suspected that an attempt, by *any* method, to demonstrate that a syllogism is conclusive, is an impropriety somewhat like that of attempting to demonstrate an axiom. In a just syllogism, the connexion between the premises and the conclusion is not only real, but *immediate*; so that no proposition can come between them to make their connexion more apparent.] The very intention of a syllogism is to leave nothing to be supplied that is necessary to a complete demonstration. Therefore a man of common understanding, who has a perfect comprehension of the premises, finds himself under a necessity of admitting the conclusion, supposing the premises to be true; and the conclusion is connected with the premises with all the force of intuitive evidence. In a word, an immediate conclusion is seen in the

premises by the light *of common sense;* and, where that is wanting, no kind of reasoning will supply its place.

V. *Of this theory, considered as an engine of science.—Syllogism, as an instrument of knowledge, little to be applauded.*—[(1) The slow progress of useful knowledge, during the many ages in which the syllogistic art was most highly cultivated as the only guide to science, (2) and its quick progress since that art was disused, suggest a presumption against it; (3) and this presumption is strengthened by the puerility of the examples which have always been brought to illustrate its rules.]

[The ancients seem to have had too high notions, *both of the force of the reasoning power in man, and of the art of syllogism as its guide.* Mere reasoning can carry us but a very little way in most subjects.] By observation, and experiments properly conducted, the stock of human knowledge may be enlarged without end; but the power of reasoning alone, applied with vigour through a long life, would only carry a man round like a horse in a mill, who labours hard, but makes no progress. [There is indeed an exception to this observation in the mathematical sciences.] [The relations of quantity (1) are so various, (2) and so susceptible of exact mensuration, that long trains of accurate reasoning on that subject may be formed, and conclusions drawn, very remote from the first principles. It is in this science, and those which depend upon it, that the power of reasoning triumphs; in other matters its trophies are inconsiderable. If any man doubt this, let him produce in any subject unconnected with mathematics, a train of reasoning of some length leading to a conclusion, which, without this train of reasoning, would never have been brought within human sight. Every man acquainted with mathematics can produce thousands of such trains of reasoning. [I do not say, that none such can be produced in other sciences; but I believe they are few, and not easily found; and that, if they are found, it will not be in subjects that can be expressed by *categorical* propositions, to which *alone* the theory of figure and mode extends.]

In matters to which that theory extends, a man of good sense, who can distinguish things that differ, who can avoid the snares of ambiguous words, and who is moderately practised in such matters, sees at once all that can be inferred from the premises, or finds that there is but a *very short step* to the conclusion.

[When the power of reasoning is so feeble by nature, especially in subjects to which this theory can be applied, it would be unreasonable to expect great effects from it. And hence we see the reason why the examples brought to illustrate it by the most ingenious logicians have rather tended to bring it into contempt.]*

* Vide p. 577.

Syllogisms useless in mathematics, for two reasons.—[If it should be thought that the syllogistic art may be a useful engine in mathematics, in which pure reasoning has ample scope, first, it may be observed, (1) *That facts are unfavourable to this opinion;*] for it does not appear that Euclid, or Apollonius, or Archimedes, or Huygens, or Newton, ever made the least use of this art; and I am even of opinion that no use can be made of it in *mathematics.* [I would not wish to advance this rashly, since Aristotle has said that mathematicians reason for the most part in the first figure. What led him to think so was that the *first figure only* yields conclusions that are universal and affirmative, and the conclusions of mathematics are commonly of that kind.] [But it is to be observed, (2) that the propositions of mathematics are not *categorical* propositions, consisting of *one subject and one predicate.* They express some *relation* which one quantity bears to another, and on that account must have *three* terms. *The quantities compared make two, and the relation between them is a third.* Now, to such propositions we can neither apply the rules concerning the conversion of propositions, nor can they enter into a syllogism of any of the figures or modes.] We observed before that this conversion, *A is greater than B*, therefore *B is less than A*, does not fall within the rules of conversion given by Aristotle or the logicians; and we now add that this simple reasoning, *A is equal to B, and B to C*, therefore *A is equal to C*, cannot be brought into any syllogism in figure and mode. There are, indeed, syllogisms into which mathematical propositions may enter, and of such we shall afterwards speak; but they have nothing to do with the system of figure and mode.

When we go without the circle of the mathematical sciences, I know nothing in which there seems to be so much demonstration as in that part of logic which treats of the figures and modes of syllogism; but the few remarks we have made show that it has some weak places; and, besides, this system cannot be used as an engine to rear itself.

The compass of the syllogistic system, as an engine of science, may be discerned by a compendious and general view of the conclusion drawn, and the argument used to prove it, in each of the three figures.

In the first figure, the conclusion affirms or denies something of a certain species or individual; and the argument to prove this conclusion is, that the same thing may be affirmed or denied of the whole genus to which that species or individual belongs.

In the second figure the conclusion is, That some species or individual does not belong to such a genus; and the argument is, That some attribute common to the whole genus does not belong to that species or individual.

In the third figure, the conclusion is, That such an attribute

belongs to part of a genus; and the argument is, that the attribute in question belongs to a species or individual which is part of that genus.

I apprehend, that, in this short view, every conclusion that falls within the compass of the three figures, as well as the mean of proof, is comprehended. The rules of all the figures might be easily deduced from it; and it appears that there is only one principle of reasoning in all the three; so that it is not strange that a syllogism of one figure should be reduced to one of another figure.

[The *general principle* in which the whole terminates, and of which every categorical syllogism is only a particular application, is this, *That what is affirmed or denied of the whole genus may be affirmed or denied of every species and individual belonging to it.*] This is a principle of undoubted certainty indeed, but of no great depth. Aristotle and all the logicians assume it as an axiom, or first principle, from which the syllogistic system, as it were, takes its departure; and after a tedious voyage, and great expense of demonstration, it lands at last in this principle, as its ultimate conclusion, "O curas hominum! O quantum est in rebus inane!"

VI. *Of modal syllogisms.—This enumeration of modes objected to.*—[*Categorical propositions*, besides their quantity and quality, have another affection, by which they are divided into pure and modal.] In a pure proposition, the predicate is barely affirmed or denied of the subject; but, in a modal proposition, the affirmation or negation is modified, by being declared to be necessary, or contingent, or possible, or impossible. These are the four modes observed by Aristotle, from which he denominates a proposition modal. [His genuine disciples maintain that these are all the modes that can affect an affirmation or negation, and that the enumeration is complete.] Others maintain that this enumeration is incomplete; and that, when an affirmation or negation is said to be *certain* or uncertain, *probable* or improbable, this makes a modal proposition, no less than the four modes of Aristotle.] We shall not enter into this dispute, but proceed to observe, that the epithets of *pure* and *modal* are applied to *syllogisms as well as to propositions*. A pure syllogism is that in which both premises are pure propositions. [A modal syllogism is that in which *either of the premises is a modal proposition*.

The syllogisms of which we have already said so much are those only which are *pure* as well as *categorical*.] But when we consider that, through all the figures and modes, a syllogism may have one premise modal of any of the four modes, while the other is pure, or it may have both premises modal, and that they may be either of the same mode or of different modes, what prodigious variety arises from all these combinations? Now, it is the business of a logician to show how the conclusion is affected

in all this variety of cases. Aristotle has done this in his "First Analytics" with immense labour; and it will not be thought strange that, when he had employed only four chapters in discussing one hundred and ninety-two modes, true and false, of pure syllogisms, he should employ fifteen upon modal syllogisms.

I am very willing to excuse myself from entering upon this great branch of logic, by the judgment and example of those who cannot be charged either with want of respect to Aristotle, or with a low esteem of the syllogistic art.

Keckerman, a famous Dantzican professor, who spent his life in teaching and writing logic, in his huge folio system of that science, published anno 1600, calls the doctrine of the modals the *crux logicorum*. With regard to the scholastic doctors, among whom this was a proverb, "De modalibus non gustabit asinus," he thinks it very dubious whether they tortured most the modal syllogisms, or were most tortured by them. But those crabbed geniuses, says he, made this doctrine so very thorny, that it is fitter to tear a man's wits in pieces than to give them solidity. [He desires it to be observed, that the doctrine of the modals is adapted to the Greek language.] The modal terms were frequently used by the Greeks in their disputations, and, on that account, are so fully handled by Aristotle, but, in the Latin tongue, you shall hardly ever meet with them. Nor do I remember, in all my experience, says he, to have observed any man in danger of being foiled in a dispute through his ignorance of the modals.

This author, however, out of respect to Aristotle, treats pretty fully of modal propositions, showing how to distinguish their subject and predicate, their quantity and quality. But the modal syllogisms he passes over altogether.

Ludovicus Vives, whom I mention, not as a devotee of Aristotle, but on account of his own judgment and learning, thinks that the doctrine of modals ought to be banished out of logic, and remitted to grammar; and that if the grammar of the Greek tongue had been brought to a system in the time of Aristotle, that most acute philosopher would have saved the great labour he has bestowed on this subject.

Burgersdick, after enumerating five classes of modal syllogisms, observes, that they require many rules and cautions, which Aristotle hath handled diligently; but that, as the use of them is not great, and their rules difficult, he thinks it not worth while to enter into the discussion of them; recommending to those who would understand them, the most learned paraphrase of Joannes Monlorius upon the first book of the "First Analytics."

All the writers of logic for two hundred years back, that have fallen into my hands, have passed over the rules of modal syllogisms with as little ceremony. So that this great branch of the

doctrine of syllogism, so diligently handled by Aristotle, fell into neglect, if not contempt, even while the doctrine of pure syllogisms continued in the highest esteem. Moved by these authorities, I shall let this doctrine rest in peace, without giving the least disturbance to its ashes.

VII. *On syllogisms that do not belong to figure and mode.*—Aristotle gives some observations upon imperfect syllogisms; such as the Enthimema, in which one of the premises is not expressed, but understood, Induction, wherein we collect a universal from a full enum ation of particulars; and Examples, which are an imperfect induction. The logicians have copied Aristotle upon these kinds of reasoning, without any considerable improvement. But to compensate the modal syllogisms, which they have laid aside, they have given rules for several kinds of syllogism of which Aristotle takes no notice. These may be reduced to two classes.

[The first class comprehends the syllogisms into which any exclusive restrictive exception, or reduplicative proposition, enters. Such propositions are by some called *exponible*, by others *imperfectly modal.*] The rules given with regard to these are obvious, from a just interpretation of the propositions."

[The second class is that of hypothetical syllogisms, which take that denomination from having a hypothetical proposition for one or both premises. Most logicians give the name of *hypothetical* to all complex propositions which have more terms than one subject and one predicate. I use the word in this *large sense*, and mean, by hypothetical syllogisms, all those in which either of the premises consist of *more terms than two.*] How many various kinds there may be of such syllogisms, has never been ascertained. The logicians have given names to some; such as the copulative, the conditional, by some called hypothetical, and the disjunctive.

Such syllogisms cannot be tried by the rules of figure and mode. Every kind would require rules peculiar to itself. Logicians have given rules for some kinds; but there are many that have not so much as a name.

The dilemma is considered by most logicians as a species of the disjunctive syllogism. A remarkable property of this kind is, that it may sometimes be happily retorted: it is, it seems, like a hand grenade, which, by dexterous management, may be thrown back so as to spend its force upon the assailant. We shall conclude this tedious account of syllogisms with a dilemma mentioned by A. Gellius, and from him by many logicians, as insoluble in any other way.

"Euathlus, a rich young man, desirous of learning the art of pleading, applied to Protagoras, a celebrated sophist, to instruct him, promising a great sum of money as his reward, one half of

which was paid down, the other half he bound himself to pay as soon as he should plead a cause before the judges, and gain it. Protagoras found him a very apt scholar; but, after he had made good progress, he was in no haste to plead causes. The master, conceiving that he intended by this means to shift off his second payment, took, as he thought, a sure method to get the better of his delay. He sued Euathlus before the judges, and, having opened his cause at the bar, he pleaded to this purpose: O most foolish young man, do you not see that, in any event, I must gain my point? for if the judges give sentence for me, you must pay by their sentence; if against me, the condition of our bargain is fulfilled, and you have no plea left for your delay, after having pleaded and gained a cause. To which Euathlus answered: O most wise master, I might have avoided the force of your argument by not pleading my own cause. But, giving up this advantage, do you not see that, whatever sentence the judges pass, I am safe? If they give sentence for me, I am acquitted by their sentence; if against me, the condition of our bargain is not fulfilled, by my pleading a cause and losing it. The judges, thinking the arguments unanswerable on both sides, put off the cause to a long day."

CHAPTER V.

ACCOUNT OF THE REMAINING BOOKS OF THE ORGANON

I. *Of the last analytics.*—In the first analytics, syllogisms are considered in respect of their form; they are now to be considered in respect of their matter. The form lies in the necessary connexion between the premises and the conclusion; and where such a connexion is wanting, they are said to be informal, or vicious in point of form.

But where there is no fault in the form, there may be in the matter; that is, in the propositions of which they are composed, which may be true or false, probable or improbable.

Division of syllogisms as to matter.—(1) [When the premises are *certain*, and the conclusion drawn from them in due form, this is demonstration, and produces science. Such syllogisms are called *apodictical*,] and are handled in the two books of the last analytics. (2) [When the premises are not certain, but *probable* only, such syllogisms are called *dialectical*;] and of them he treats in the eight books of the topics. [But (3) there are some syllogisms which seem to be perfect both in matter and form, when they are not really so; as a face may seem beautiful which is but painted. These being apt to deceive, and produce a false opinion, are called *sophistical*;] and they are the subject of the book concerning sophisms.

To return to the last analytics, which treat of demonstration and of science: we shall not pretend to abridge these books, for Aristotle's writings do not admit of abridgment: no man, in fewer words, can say what he says; and he is not often guilty of repetition. We shall only give some of his capital conclusions, omitting his long reasonings and nice distinctions, of which his genius was wonderfully productive.

All demonstration must be built upon principles already known, and these upon others of the same kind, until we come at last to first principles, which neither can be demonstrated, nor need to be, being evident of themselves.

We cannot demonstrate things in a circle, supporting the conclusion by the premises, and the premises by the conclusion. Nor can there be an infinite number of middle terms between the first principle and the conclusion.

Necessary character of first principles in demonstration.—[In all demonstration, the first principles, the conclusion, and all the intermediate propositions, must be *necessary, general, and eternal truths; for of things fortuitous, contingent, or mutable, and of individual things, there is no demonstration.*]

Demonstrations twofold.—[Some demonstrations prove only that the thing *is* thus affected; others prove *why* it is thus affected.] [The former may be drawn from a remote cause, or from an effect; but the latter must be drawn from an immediate cause, and are the most perfect.]

The first figure is best adapted to demonstration, because it affords conclusions universally affirmative; and this figure is commonly used by the mathematicians.

The demonstration of an affirmative proposition is preferable to that of a negative, the demonstration of a universal to that of a particular, and direct demonstration to that *ad absurdum.*

The principles are more certain than the conclusion.

There cannot be opinion and science of the same thing at the same time.

[In the second book we are taught, that the questions that may be put with regard to any thing are four: 1. Whether the thing be thus affected. 2. Why it is thus affected. 3. Whether it exists. 4. What it is.]

The last of these questions Aristotle, in good Greek, calls the *What is it* of a thing. The schoolmen, in very barbarous Latin, called this the *quiddity* of a thing. This quiddity, he proves by many arguments, cannot be demonstrated, but must be fixed by a definition. This gives occasion to treat of definition, and how a right definition should be formed. As an example, he gives a definition of the number *three*, and defines it to be the first odd number.

[In this book he treats also of the four kinds of causes; efficient, material, formal, and final.]

First principles obtained by induction.—[Another thing treated of in this book is, *the manner in which we acquire first principles*, which are the foundation of all demonstration. (1) *These are not innate, because we may be for a great part of life ignorant of them;* (2) nor can they be deduced demonstratively from any antecedent knowledge, otherwise they would not be *first* principles.] [Therefore he concludes, that *first principles are got by induction from the informations of sense.*] The senses give us informations of individual things, and from these by induction we draw general conclusions: for it is a maxim with Aristotle, *That there is nothing in the understanding which was not before in some sense.*] The knowledge of first principles, as it is not acquired by demonstration, ought not to be called science, and therefore he calls it *intelligence.*

II. *Of the topics.*—The professed design of the Topics is, to show a method by which a man may be able to reason with probability and consistency upon every question that can occur.

Aristotelian predicables.—[Every question is either about (1) the genus of the subject, or (2) its specific difference, or (3) something proper to it, or (4) something accidental.]*

To prove that this division is complete, Aristotle reasons thus: Whatever is attributed to a subject, it must either be, that the subject can be reciprocally attributed to it, or that it cannot. If the subject and attribute can be reciprocated, the attribute either declares what the subject is, and then it is a definition, or it does not declare what the subject is, and then it is a property. If the attribute cannot be reciprocated, it must be something contained in the definition, or not. If it be contained in the definition of the subject, it must be the genus of the subject, or its specific difference; for the definition consists of these two. If it be not contained in the definition of the subject, it must be an accident.

[The furniture proper to fit a man for arguing dialectically may be reduced to these four heads: 1. Probable propositions of all sorts, which may on occasion be assumed in an argument. 2. Distinctions of words which are nearly of the same signification. 3. Distinctions of things which are not so far asunder but that they may be taken for one and the same. 4. Similitudes.]

The second and the five following books are taken up in enumerating the topics or heads of argument that may be used in questions about the genus, the definition, the properties, and the accidents of a thing; and occasionally he introduces the topics for proving things to be the same or different, and the topics for proving one thing to be better or worse than another.

In this enumeration of topics, Aristotle has shown more the fertility of his genius than the accuracy of method. The writers

* Vide p. 560.

of logic seem to be of this opinion: for I know none of them that has followed him closely upon this subject. They have considered the topics of argumentation as reducible to certain axioms. For instance, when the question is about the genus of a thing, it must be determined by some axiom about genus and species; when it is about a definition, it must be determined by some axiom relating to definition, and things defined; and so of other questions. [They have therefore reduced the doctrine of the topics to certain axioms or canons, and disposed these axioms in order under certain heads.]

This method seems to be more commodious and elegant than that of Aristotle. Yet it must be acknowledged that Aristotle has furnished the materials from which all the logicians have borrowed their doctrine of topics; and even Cicero, Quintilian, and other rhetorical writers, have been much indebted to the topics of Aristotle.

He was the first, as far as I know, who made an attempt of this kind; and in this he acted up to the magnanimity of his own genius, and that of ancient philosophy. Every subject of human thought had been reduced to ten categories, every thing that can be attributed to any subject to five predicables: he attempted to reduce all the forms of reasoning to fixed rules of figure and mode, and to reduce all the topics of argumentation under certain heads; and by that means to collect, as it were, into one store all that can be said on one side or the other of every question, and to provide a grand arsenal, from which all future combatants might be furnished with arms offensive and defensive in every cause, so as to leave no room to future generations to invent any thing new.

The last book of the topics is a code of the laws according to which a syllogistical disputation ought to be managed, both on the part of the assailant and defendant: [from which it is evident that this philosopher trained his disciples to contend, not for truth merely, but for victory.]

III. *Of the book concerning sophisms.*—A syllogism which leads to a false conclusion must be vicious either in matter or form, for from true principles nothing but truth can be justly deduced. If the matter be faulty, that is, if either of the premises be false, that premise must be denied by the defendant. If the form be faulty, some rule of syllogism is transgressed, and it is the part of the defendant to show what general or special rule it is that is transgressed; so that, if he be an able logician, he will be impregnable in the defence of truth, and may resist all the attacks of the sophist. But as there are syllogisms which may seem to be perfect both in matter and form, when they are not really so, as a piece of money may seem to be good coin when it is adulterate, such fallacious syllogisms are

considered in this treatise, in order to make a defendant more expert in the use of his defensive weapons.

And here the author, with his usual magnanimity, attempts to bring all the fallacies that can enter into a syllogism under thirteen heads, of which *six lie in the diction or language* (in dictione), *and seven not in the diction* (extra dictionem).

The fallacies in diction are, 1. When an ambiguous word is taken at one time in one sense, and at another time in another. 2. When an ambiguous phrase is taken in the same manner. 3; and 4. Are ambiguities in syntax; when words are conjoined in syntax that ought to be disjoined, or disjoined when they ought to be conjoined. 5. Is an ambiguity in prosody, accent, or pronunciation. 6. An ambiguity arising from some figure of speech.

When a sophism of any of these kinds is translated into another language, or even rendered into unambiguous expressions in the same language, the fallacy is evident, and the syllogism appears to have four terms.

The seven fallacies which are said not to be in the diction, but in the thing, have their proper names in Greek and in Latin, by which they are distinguished. Without minding their names, we shall give a brief account of their nature.

1. The first is, taking an accidental conjunction of things for a natural or necessary connexion; as, when from an accident we infer a property; when from an example we infer a rule; when from a single act we infer a habit.

2. Taking that absolutely which ought to be taken comparatively, or with a certain limitation. The construction of language often leads into this fallacy; for, in all languages, it is common to use absolute terms to signify things that carry in them some secret comparison, or to use unlimited terms to signify what from its nature must be limited.

3. Taking that for the cause of a thing which is only an occasion or concomitant.

4. Begging the question. This is done when the thing to be proved, or something equivalent, is assumed in the premises.

5. Mistaking the question. When the conclusion of the syllogism is not the thing that ought to be proved, but something else that is mistaken for it.

6. When that which is not a consequence is mistaken for a consequence; as if, because all Africans are black, it were taken for granted that all blacks are Africans.

7. The last fallacy lies in propositions that are complex, and imply two affirmations, whereof one may be true, and the other false; so that, whether you grant the proposition or deny it, you are entangled; as when it is affirmed that such a man has left off playing the fool. If it be granted, it implies that he

did play the fool formerly. If it be denied, it implies, or seems to imply, that he plays the fool still.

[In this enumeration we ought, in justice to Aristotle, to expect only the fallacies incident to *categorical syllogisms*. And I do not find that the logicians have made any additions to it when taken in this view; although they have given some other fallacies that are incident to syllogisms of the hypothetical kind, particularly the *fallacy of an incomplete enumeration in disjunctive syllogisms and dilemmas.*]

The different species of sophisms above-mentioned are not so precisely defined by Aristotle, or by subsequent logicians, but that they allow of great latitude in the application; and it is often dubious under what particular species a sophistical syllogism ought to be classed. We even find the same example brought under one species by one author, and under another species by another. [Nay, what is more strange, Aristotle himself employs a long chapter in proving, by a particular induction, that all the seven may be brought under that which we have called *mistaking the question*, and which is commonly called *ignoratio elenchi.*] And indeed the proof of this is easy, without that laborious detail which Aristotle uses for the purpose: [for if you lop off from the conclusion of a sophistical syllogism all that is not supported by the premises, the conclusion in that case will always be found different from that which ought to have been proved; and so it falls under the *ignoratio elenchi.*]

It was probably Aristotle's aim to reduce all the possible variety of sophisms, as he had attempted to do of just syllogisms, to certain definite species: but he seems to be sensible that he had fallen short in this last attempt. When a genus is properly divided into its species, the species should not only, when taken together, exhaust the whole genus, but every species should have its own precinct so accurately defined that one shall not encroach upon another. [And when an individual can be said to belong to two or three different species, the division is imperfect; yet this is the case with Aristotle's division of the sophisms, by his own acknowledgment. It ought not therefore, to be taken for a division strictly logical.] It may rather be compared to the several species or forms of action invented in law for the redress of wrongs. For every wrong there is a remedy in law by one action or another; but sometimes a man may take his choice among several different actions. So every sophistical syllogism may, by a little art, be brought under one or other of the species mentioned by Aristotle, and very often you may take your choice of two or three.

Besides the enumeration of the various kinds of sophisms, there are many other things in this treatise concerning the art of managing a syllogistical dispute with an antagonist. And

indeed, if the passion for this kind of litigation, which reigned for so many ages, should ever again lift up its head, we may predict that the Organon of Aristotle will then become a fashionable study; for it contains such admirable materials and documents for this art, that he may be said to have brought it to a science.

The conclusion of this treatise ought not to be overlooked; it manifestly relates, not to the present treatise only, but also to the whole analytics and topics of the author. I shall therefore give the substance of it.

"Of those who may be called inventors, some have made important additions to things long before begun and carried on through a course of ages; others have given a small beginning to things which, in succeeding times, will be brought to greater perfection. The beginning of a thing, though small, is the chief part of it, and requires the greatest degree of invention; for it is easy to make additions to inventions once begun. Now, with regard to the dialectical art, there was not something done, and something remaining to be done. There was absolutely nothing done: for those who professed the art of disputation had only a set of orations composed, and of arguments, and of captious questions, which might suit many occasions. These their scholars soon learned, and fitted to the occasion. This was not to teach you the art, but to furnish you with the materials produced by the art: as if a man professing to teach you the art of making shoes should bring you a parcel of shoes of various sizes and shapes, from which you may provide those who want. This may have its use, but it is not to teach the art of making shoes. And indeed, with regard to rhetorical declamation, there are many precepts handed down from ancient times; but, with regard to the construction of syllogisms, not one.

"We have, therefore, employed much time and labour upon this subject; and if our system appear to you not to be in the number of those things which, being before carried a certain length, were left to be perfected, we hope for your favourable acceptance of what is done, and your indulgence in what is left imperfect."

CHAPTER VI.

REFLECTIONS ON THE UTILITY OF LOGIC AND THE MEANS OF ITS IMPROVEMENT

I. *Of the utility of logic.*—Men rarely leave one extreme without running into the contrary. It is no wonder, therefore, that the excessive admiration of Aristotle, which continued for

so many ages, should end in an undue contempt, and that the high esteem of logic, as the grand engine of science, should at last make way for too unfavourable an opinion, which seems now prevalent, of its being unworthy of a place in a liberal education. Those who think according to the fashion, as the greatest part of men do, will be as prone to go into this extreme as their grandfathers were to go into the contrary.

Laying aside prejudice, whether fashionable or unfashionable, let us consider whether logic is or may be made subservient to any good purpose. Its professed end is, to teach men to think, to judge, and to reason, with precision and accuracy. No man will say that this is a matter of no importance; the only thing, therefore, that admits of doubt is, whether it can be taught.*

To resolve this doubt, it may be observed, that our rational faculty is the gift of God, given to men in very different measure. Some have a large portion, some a less; and where there is a remarkable defect of the natural power, it cannot be supplied by any culture. But this natural power, even where it is the strongest, may lie dead for want of the means of improvement: a savage may have been born with as good faculties as a Bacon or a Newton: but his talent was buried, being never put to use; while theirs was cultivated to the best advantage.

It may likewise be observed, that the chief mean of improving our rational power is the vigorous exercise of it in various ways and in different subjects, by which the habit is acquired of exercising it properly. Without such exercise, and good sense over and above, a man who has studied logic all his life may, after all, be only a petulant wrangler, without true judgment or skill of reasoning in any science.

I take this to be Locke's meaning, when, in his "Thoughts on Education," he says, "If you would have your son to reason well, let him read Chillingworth." The state of things is much altered since Locke wrote. Logic has been much improved, chiefly by his writings; and yet much less stress is laid upon it, and less time consumed in it. His counsel, therefore, was judicious and seasonable, viz., That the improvement of our reasoning power is to be expected much more from an intimate acquaintance with the authors who reason the best, than from studying voluminous systems of logic. But if he had meant that the study of logic was of no use, nor deserved any attention, he surely would not have taken the pains to have made so considerable an addition to it by his "Essay on the Human Understanding," and by his "Thoughts on the Conduct of the Understand-

* Another consideration is, whether the Aristotelian system of logic is at all calculated to effect this object; for if it shall appear that it does not at all contribute to it, we need not be surprised that it has fallen into disrepute.

ing." Nor would he have remitted his pupil to Chillingworth, the acutest logician as well as the best reasoner of his age, and one who, in innumerable places of his excellent book, without pedantry, even in that pedantic age, makes the happiest application of the rules of logic for unravelling the sophistical reasoning of his antagonist.

Our reasoning power makes no appearance in infancy, but, as we grow up, it unfolds itself by degrees, like the bud of a tree.* When a child first draws an inference, or perceives the force of an inference drawn by another, we may call this *the birth of his reason*: but it is yet like a new-born babe, weak and tender; it must be cherished, carried in arms, and have food of easy digestion, till it gather strength.

I believe no man remembers the birth of his reason; but it is probable that his decisions are at first weak and wavering, and, compared with that steady conviction which he acquires in ripe years, are like the dawn of the morning compared with noon-day. We see that the reason of children yields to authority, as a reed to the wind; nay, that it clings to it, and leans upon it, as if conscious of its own weakness.

When reason acquires such strength as to stand on its own bottom, without the aid of authority, or even in opposition to authority, this may be called its *manly age*. But, in most men, it hardly ever arrives at this period. Many, by their situation in life, have not the opportunity of cultivating their rational powers. Many, from the habit they have acquired of submitting their opinions to the authority of others, or from some other principle which operates more powerfully than the love of truth, suffer their judgment to be carried along to the end of their days, either by the authority of a leader, or of a party, or of the multitude, or by their own passions. Such persons, however learned, however acute, may be said to be all their days children in understanding. They reason, they dispute, and perhaps write; but it is not that they may find the truth, but that they may defend opinions which have descended to them by inheritance, or into which they have fallen by accident, or been led by affection.

The reasoning faculties rightly directed by Locke.—[I agree with Mr. Locke, that there is no study better fitted to exercise and strengthen the reasoning powers, than that of the *mathematical sciences*, for two reasons: first, because there is no other branch of science which gives such scope to long and accurate trains of reasoning; and, secondly, because, in mathematics, *there is no room* (1) *for authority*, (2) nor *for prejudice* of any kind, which may give a false bias to the judgment.]

When a youth of moderate parts begins to study Euclid, every thing at first is new to him. His apprehension is unsteady;

* [illegible]

his judgment is feeble, and rests partly upon the evidence of the thing, and partly upon the authority of his teacher. But, every time he goes over the definitions, the axioms, the elementary propositions, more light breaks in upon him; the language becomes familiar, and conveys clear and steady conceptions; the judgment is confirmed; he begins to see what demonstration is, and it is impossible to see it without being charmed with it. He perceives it to be a kind of evidence that has no need of authority to strengthen it. He finds himself emancipated from that bondage, and exults so much in this new state of independence, that he spurns at authority, and would have demonstration for every thing, until experience teaches him that this is a kind of evidence that cannot be had in most things, and that, in his most important concerns, he must rest contented with probability.

As he goes on in mathematics, the road to demonstration becomes smooth and easy; he can walk in it firmly, and take wider steps, and at last he acquires the habit not only of understanding a demonstration, but of discovering and demonstrating mathematical truths.

Thus a man, without rules of logic, may acquire a habit of reasoning justly in mathematics; and I believe he may, by like means, acquire a habit of reasoning justly in mechanics, in jurisprudence, in politics, or in any other science. Good sense, good examples, and assiduous exercise, may bring a man to reason justly and acutely in his own profession without rules.

But if any man think that, from this concession, he may infer the inutility of logic, he betrays a great want of that art by this inference; for it is no better reasoning than this, That because a man may go from Edinburgh to London by the way of Paris, therefore any other road is useless.

There is perhaps no practical art which may not be acquired, in a very considerable degree, by example and practice, without reducing it to rules. But practice joined with rules may carry a man on in his art farther and more quickly than practice without rules. Every ingenious artist knows the utility of having his art reduced to rules, and by that means made a science. He is thereby enlightened in his practice, and works with more assurance. By rules he sometimes corrects his own errors, and often detects the errors of others; he finds them of great use to confirm his judgment, to justify what is right, and to condemn what is wrong.

Is it of no use in reasoning to be well acquainted with the various powers of the human understanding, by which we reason? Is it of no use to resolve the various kinds of reasoning into their simple elements, and to discover, as far as we are able, the rules by which these elements are combined in judging and in reasoning? Is it of no use to mark the various fallacies in reasoning,

by which even the most ingenious men have been led into error? It must surely betray great want of understanding to think these things useless or unimportant. These are the things which logicians have attempted, and which they have executed; not indeed so completely as to leave no room for improvement, but in such a manner as to give very considerable aid to our reasoning powers. That the principles laid down with regard to definition and division, with regard to the conversion and opposition of propositions, and the general rules of reasoning, are not without use, is sufficiently apparent from the blunders committed by those who disdain any acquaintance with them.

Although the art of categorical syllogism is better fitted for scholastic litigation than for real improvement in knowledge, it is a venerable piece of antiquity, and a great effort of human genius. We admire the pyramids of Egypt and the wall of China, though useless burdens upon the earth: we can bear the most minute description of them, and travel hundreds of leagues to see them: if any person should, with sacrilegious hands, destroy or deface them, his memory would be had in abhorrence. The predicaments and predicables, the rules of syllogism, and the topics, have a like title to our veneration as antiquities; they are uncommon efforts, not of human power, but of human genius, and they make a remarkable period in the progress of human reason.

The prejudice against logic has probably been strengthened by its being taught too early in life. Boys are often taught logic as they are taught their creed, when it is an exercise of memory only, without understanding. One may as well expect to understand grammar before he can speak, as to understand logic before he can reason. It must even be acknowledged, that commonly we are capable of reasoning in mathematics more early than in logic. [The objects presented to the mind in this science are of *a very abstract nature*, and can be distinctly conceived only when we are capable of attentive reflection upon the operations of our own understanding, and after we have been accustomed to reason.] There may be an elementary logic, suited to the capacities of those who have been but little exercised in reasoning; but the most important parts of this science require a ripe understanding, capable of reflecting upon its own operations. [Therefore, to make logic the first branch of science that is to be taught, is an old error that ought to be corrected.]

II. *Of the improvement of logic.*—In compositions of human thought, expressed by speech or by writing, whatever is excellent and whatever is faulty fall within the province either of grammar, or of rhetoric, or of logic. Propriety of expression is the province of grammar; grace, elegance, and force, in thought and in expression, are the province of rhetoric; justness and accuracy of thought, are the province of logic.

The faults in composition, therefore, which fall under the censure of logic, are obscure and indistinct conceptions, false judgment, inconclusive reasoning, and all improprieties in distinctions, definitions, division, or method. To aid our rational powers in avoiding these faults, and in attaining the opposite excellences, is the end of logic; and whatever there is in it that has no tendency to promote this end ought to be thrown out.

The rules of logic, being of a very abstract nature, ought to be illustrated by a variety of real and striking examples taken from the writings of good authors. It is both instructive and entertaining to observe the virtues of accurate composition in writers of fame; we cannot see them without being drawn to the imitation of them, in a more powerful manner than we can be by dry rules. Nor are the faults of such writers less instructive or less powerful monitors. A wreck left upon a shoal, or upon a rock, is not more useful to the sailor than the faults of good writers, when set up to view, are to those who come after them. It was a happy thought in a late ingenious writer of English grammar to collect under the several rules examples of bad English found in the most approved authors. It were to be wished that the rules of logic were illustrated in the same manner. By these means a system of logic would become a repository, wherein whatever is most acute in judging and in reasoning, whatever is most accurate in dividing, distinguishing, and defining, should be laid up and disposed in order for our imitation, and wherein the false steps of eminent authors should be recorded for our admonition.

After men had laboured in the search of truth near two thousand years by the help of syllogisms, Lord Bacon proposed the method of induction, as a more effectual engine for that purpose. His "Novum Organum" gave a new turn to the thoughts and labours of the inquisitive, more remarkable and more useful than that which the "Organum" of Aristotle had given before, and may be considered as a second grand era in the progress of human reason.

The art of syllogism produced numberless disputes, and numberless sects who fought against each other with much animosity, without gaining or losing ground, but did nothing considerable for the benefit of human life. The art of induction, first delineated by Lord Bacon, produced numberless laboratories and observatories, in which nature has been put to the question by thousands of experiments, and forced to confess many of her secrets that before were hid from mortals; and, by these, arts have been improved, and human knowledge wonderfully increased.

Difference between syllogism and induction.—[In reasoning by syllogism from general principles, we descend to a conclusion virtually contained in them. The process of induction is more arduous, being an assent from particular premises to a general

conclusion. The evidence of such general conclusions is *probable* only, not demonstrative; but when the induction is sufficiently copious, and carried on according to the rules of art, it forces conviction no less than demonstration itself does.]

The greatest part of human knowledge rests upon evidence of this kind. Indeed, we can have no other for general truths which are contingent in their nature, and depend upon the will and ordination of the Maker of the world. He governs the world he has made by general laws: the effects of these laws in particular phenomena are open to our observation; and, by observing a train of uniform effects with due caution, we may at last decypher the law of nature by which they are regulated.

Lord Bacon has displayed no less force of genius in reducing to rules this method of reasoning than Aristotle did in the method of syllogism. His "Novum Organum" ought therefore to be held as a most important addition to the ancient logic. Those who understand it, and enter into its spirit, will be able to distinguish the chaff from the wheat in philosophical disquisitions into the works of God. They will learn to hold in due contempt all hypotheses and theories, the creatures of human imagination, and to respect nothing but facts sufficiently vouched, or conclusions drawn from them by a fair and chaste interpretation of nature.

Most arts have been reduced to rules, after they had been brought to a considerable degree of perfection by the natural sagacity of artists, and the rules have been drawn from the best examples of the art that had been before exhibited: (1) [but the art of philosophical induction was delineated by Lord Bacon in a very ample manner *before* the world had seen any tolerable example of it.] This, although it adds greatly to the merit of the author, must have produced some obscurity in the work, and a defect of proper examples for illustration. This defect may now be easily supplied from those authors who, in their philosophical disquisitions, have the most strictly pursued the path pointed out in the "Novum Organum." Among these Sir Isaac Newton appears to hold the first rank, having, in the third book of his "Principia," and in his "Optics," had the rules of the "Novum Organum" constantly in his eye.

vi (2) [I think Lord Bacon was also the first who endeavoured to reduce to a system the prejudices or biases of the mind, which are the causes of false judgment, and which he calls *the idols of the human understanding*.] Some late writers of logic have very properly introduced this into their system; but it deserves to be more copiously handled, and to be illustrated by real examples.

It is of great consequence to accurate reasoning to distinguish first principles, which are to be taken for granted, from propositions which require proof. [All the real knowledge of mankind may be divided into two parts; the first consisting of self-evi-

dent propositions; the second, of those which are deduced by just reasoning from self-evident propositions.] The line that divides these two parts ought to be marked as distinctly as possible, and the principles that are self-evident reduced, as far as can be done, to general axioms. This has been done in mathematics from the beginning, and has tended greatly to the advancement of that science. It has lately been done in natural philosophy, and by this means that science has advanced more in an hundred and fifty years than it had done before in two thousand. Every science is in an unformed state until its first principles are ascertained; after which it advances regularly, and secures the ground it has gained.

Although first principles do not admit of direct proof, yet there must be certain marks and characters by which those that are truly such may be distinguished from counterfeits. These marks ought to be described and applied, to distinguish the genuine from the spurious.

[In the ancient philosophy, there is a redundance rather than a defect of first principles.] Many things were assumed under that character without a just title: that nature abhors a *vacuum*; that bodies do not gravitate in their proper place; that the heavenly bodies undergo no change; that they move in perfect circles, and with an equable motion. Such principles as these were assumed in the Peripatetic philosophy without proof, as if they were self-evident.

Des Cartes, sensible of this weakness in the ancient philosophy, and desirous to guard against it in his own system, resolved to admit nothing until his assent was forced by irresistible evidence. The first thing that he found to be certain and evident was, that he thought, and reasoned, and doubted. He found himself under a necessity of believing the existence of those mental operations of which he was conscious; and having thus found a sure footing in this one principle of consciousness, he rested satisfied with it, hoping to be able to build the whole fabric of his knowledge upon it, like Archimedes, who wanted but one fixed point to move the whole earth. But the foundation was too narrow, and in his progress he unawares assumes many things less evident than those which he attempts to prove. Although he was not able to suspect the testimony of consciousness, yet he thought the testimony of sense, of memory, and of every other faculty, might be suspected, and ought not to be received until proof was brought that they are not fallacious. Therefore he applies these faculties, whose character is yet in question, to prove, that there is an infinitely perfect Being, who made him, and who made his senses, his memory, his reason, and all his faculties; that this Being is no deceiver, and therefore could not give him faculties that are fallacious; and that on this account they deserve credit.

It is strange that this philosopher, who found himself under a necessity of yielding to the testimony of consciousness, did not find the same necessity of yielding to the testimony of his senses, his memory, and his understanding; and that, while he was certain that he doubted and reasoned, he was uncertain whether two and three made five, and whether he was dreaming or awake. It is more strange that so acute a reasoner should not perceive that his whole train of reasoning, to prove that his faculties were not fallacious, was mere sophistry; for if his faculties were fallacious, they might deceive him in this train of reasoning; and so the conclusion, that they were not fallacious, was the only testimony of his faculties in their own favour, and might be a fallacy.

It is difficult to give any reason for distrusting our other faculties that will not reach consciousness itself. And he who distrusts the faculties of judging and reasoning which God hath given him must even rest in his scepticism till he come to a sound mind, or until God give him new faculties to sit in judgment upon the old. If it be not a first principle that our faculties are not fallacious, we must be absolute sceptics; for this principle is incapable of a proof, and, if it is not certain, nothing else can be certain.

Since the time of Des Cartes, it has been fashionable with those who deal in abstract philosophy to employ their invention in finding philosophical arguments, either to prove those truths which ought to be received as first principles, or to overturn them; and it is not easy to say, whether the authority of first principles is more hurt by the first of these attempts, or by the last: for such principles can stand secure only upon their own bottom; and to place them upon any other foundation than that of their intrinsic evidence, is in effect to overturn them.

I have lately met with a very sensible and judicious treatise, written by Father Buffier about fifty years ago, concerning first principles and the source of human judgments, which, with great propriety, he prefixed to his treatise of logic. And, indeed, I apprehend it is a subject of such consequence, that if inquisitive men can be brought to the same unanimity in the first principles of the other sciences, as in those of mathematics and natural philosophy, (and why should we despair of a general agreement in things that are self-evident?) this might be considered as a third grand era in the progress of human reason.

FINIS.

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